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EDITED BY

CHARLES E. DE M. SAJOUS, M.D., LL.D., and J. MADISON TAYLOR, A.B., M.D.

LOUIS T. DE M. SAJOUS, B.S., M.D.,
ASSISTANT EDITOR.

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Announcement

THE literature on the internal secretions has increased in recent years at a rate which even the most sanguine advocates of this line of research could not but deem astounding. In a recent issue of a German medical fortnightly, for example, *thirty* abstracts were devoted to the ductless glands alone, although the number of the journal containing them was in no way intended as a special issue on the subject. The absence of any such source of information on this side of the Atlantic in a field of knowledge with which every physician and surgeon should be familiar, has caused the editors to create a special department, in which will be incorporated what to them appears best calculated to convey the progressive features of the work done in all countries. What original articles are published will only be such as will be thought to contain some new suggestion or feature based on a careful scrutiny of available knowledge on the question treated. Full summaries of *selected* articles from the general literature, full credit being given to all journals quoted, will constitute a large part of the department, while a series of short abstracts will make it possible to utilize to greater advantage the remaining space. On the whole, it will be the aim of the editors to portray faithfully the vast progress made both on the scientific and practical sides of all that pertains to the internal secretions. This will apply not only to the various disorders of the ductless glands themselves and to organotherapy, but also to all work bearing upon the important influence of the internal secretions on the pathogenesis, prophylaxis, and therapeutics of all diseases of the body at large—a subject which is only beginning to receive the attention it deserves.

Department on the Internal Secretions

Original Articles and Summaries of Selected Articles

THE ANTITOXIC FUNCTIONS OF THE THYROID IN THE PATHOGENESIS AND TREATMENT OF GOITER.*

By CHARLES E. de M. SAJOUS, M.D., LL.D.,

PHILADELPHIA.

Although what has been termed "detoxicatory" functions have been ascribed to the thyroid gland, the relationship that this function might have with the pathogenesis of goiter has escaped attention. Authors are in accord as to the fact that the disease is due to some form of intoxication, whether the still obscure agent be calcium, some other water-borne inorganic poison, a bacterial toxin, etc. Such being the case, we have reasonable ground for the belief, in keeping with the teachings of modern research, that this poison excites in the body a defensive reaction. If the line of reasoning submitted in this paper is correct, therefore, we must add to our present conception of the pathogenesis of goiter the postulate that the causative agent in a given case acts by awakening, in the thyroid gland and its accessory parathyroid glandules, a reaction having for its purpose the destruction of that pathogenic agent.

This involves, first of all, the necessity of showing that the thyroid apparatus—by which I mean the thyroid and parathyroids—is capable of carrying on such functions. The fact that these organs jointly destroy certain poisons has long been known. Some authors held that the antitoxic process occurred in the gland itself; others that it was effected by means of a secretion or secretions contributed by the organs to the blood, the antitoxic process being carried on in the blood itself. The bulk of evidence soon showed, however, that the latter process was the true one. Striking in this connection is the fact that while removal of the thyroid and parathyroids produces tetany, now known to be due to the accumulation of certain organic poisons in the blood, the administration of these glands or grafting counteracts at least for a time the morbid effects of the operation. That the organs had for their functions to destroy these organic poisons is therefore evident. The identity of the poisons thus destroyed is suggested by the fact that the

*Read by invitation before the Cumberland County, Me., Medical Society, December 19, 1913.

paroxysms are far more severe when the experimental animal is fed meat than when a milk diet is adhered to. Moreover, the blood of thyroidectomized animals has been shown to be toxic to other animals. On the whole, we should, as I urged eleven years ago, ascribe to the thyroid both metabolic and antitoxic functions. Swale Vincent wrote recently: "The most usually accepted theory is that the thyroid manufactures an internal secretion which is essential to the proper growth and normal metabolic functions of the whole body," and, furthermore, that "this may easily and reasonably be combined with the antitoxic theory. It may be supposed," adds this author, "that the function of the internal secretion is to prevent poisoning by the products of body metabolism or by infections from without." He further summarizes much evidence, that I will spare you, by the remark that "the extreme liability of thyroidectomized animals to various infective conditions is strong evidence in support of this view." My own contributions to this idea will be submitted later.

When I ask you to associate this antitoxic function with goiter, it becomes necessary, however, to account for the enlargement of the thyroid gland which constitutes this disease. Here, we must not lose sight of the fact that many varieties of goitrous enlargement are recognized, precisely as the heart is subject to enlargement from many different causes. We consider cardiac enlargement as a mere symptom, whereas in the case of goiter we give the same enlargement the predominating rôle, slighting the many other features of morbid processes at least as varied as those met with in the heart. Again, we overlook the fact that the thyroparathyroid apparatus, like all other organs, is subject to many widely different organic disorders. Just as carcinoma, sarcoma, fibroma, cyst, angioma, degeneration, hypertrophy, and other familiar morbid changes occur in the heart muscle, so do we have a correspondingly great number of pathologic conditions in the thyroid apparatus. The symptom-complex of each of these must be as clearly identified, therefore, as any heart disease, in order that it may be treated intelligently and disappearance of the growth caused—if the morbid changes in the organ are not sufficiently advanced to defeat all efforts in that direction.

The surgical removal of a goiter is not a cure for goiter; it means the removal of a once useful organ which has been permitted, through neglect, to reach a condition of invalidism, partial or complete. Worse even than an amputated leg—which, by the way, does not mean a cured leg, but a buried leg—loss of the thyroid may mean, particularly in children, deterioration of the entire organism, including the organ of mind. So utterly oblivious are writers in this direction that some textbooks of medicine do not even refer to goiter, leaving it entirely to surgeons to describe the disease from their viewpoint, which reduces itself to descriptions of the pathology of fully developed growths, their physical characteristics, the pressure symptoms, and the surgical procedures indicated. Of their pathogenesis, that is to say, the relations between cause and effect, nothing; of the relations between the growth and bodily functions, nothing; of the process through which the occurrence of goiter could

be prevented, nothing; of the methods by which the functions of the thyroid can be restored to normal limits, nothing. Yet, rightly does the surgeon remain within his sphere; the physician has, so to say, allowed the disease to develop beyond his own reach. And so will it continue, in my opinion, until the physician makes the *functions* of the thyroparathyroid apparatus the basis of his researches on the diseases of these organs, and bases his prophylaxis and treatment on the relations between cause and effect, which means, from my viewpoint, the relations between intoxication, from within or without, and the effort of the thyroparathyroid apparatus to destroy the poison.

We have seen that Swale Vincent, in summarizing our knowledge on what he terms the "antitoxic theory," refers to the now-established fact that the purpose of the internal secretion of the thyroid—including that of the parathyroids, I would say—is to prevent poisoning by products of metabolism and also, using his own words, "by infections from without," and that, moreover, thyroidectomized animals show an extreme liability to infective conditions. When to this we add the familiar fact that pregnancy causes enlargement of the thyroid, often sufficient to be detected by palpation and inspection, the evident purpose being to take part at least in the destruction of the excess of wastes and detritus derived from the developing fetus, we must admit that a wide range of action is to be allotted to the thyroparathyroid apparatus.

It was this wide range of action which led me as far back as 1903, in the first edition of my work on the "Internal Secretions," to connect the thyroid secretion with the processes grouped under the term "immunity." I then advanced the view: (1) that the secretion of the thyroid (as one of the component organs of what I termed the adrenal system) was an active factor in the immunizing process; (2) that it took part indirectly in this process by increasing the functional activity of the adrenals and general oxidation and metabolism, and (3) that the resulting increase of functional activity in the organs which produced protective substances correspondingly augmented in the blood the quantity of these substances—then known collectively as Buchner's alexins.

Four years later (1907), these conclusions, including the participation of the thyroid secretion in the general process of immunity, received additional, and what appears to me conclusive, support. Miss Louise Fassin, of the Bacteriological Institute of Liége, summarized a series of investigations in the following words: "The first series of my experiments, in a large number of animals (dogs and rabbits), showed that the subcutaneous injection of thyroid product (fluidextract of the fresh gland) is rapidly followed in the serum by an increase of alexin, a substance discovered by Buchner, generally considered as playing an important rôle in the defense of the body. This increase becomes evident as early as ten minutes after the injection; it becomes accentuated after one hour, and reaches its maximum in twenty-four hours; then the proportion of alexin in the blood recedes more or less rapidly until the normal is reached. The effects of one injection rarely last

less than twenty-four hours or more than two or three days." She also found that the oral administration of thyroid brought about corresponding effects. I may recall, moreover, that as shown by Reid Hunt, an overactive thyroid gives rise to an increase of organic iodine in the blood, and that as far back as 1903[1] I urged that the antitoxic activity of an antitoxic serum coincided with the proportion of thyroiodine it contained.

To control these results as to their direct relationship with the thyroid, Miss Fassin performed complete thyroidectomy in nine animals. One alone, however, survived the operation more than fifteen days; tetany occurred in all, thus showing that the parathyroids had been completely removed. "In all the animals operated on," she writes, "there occurred a marked diminution of the hemolytic and bactericidal alexin."

While this clearly shows an intimate relationship between the thyroid and the general immunizing process, it does not tell us what the excess of thyroparathyroid secretion represents in the blood. Study of this question led me to conclude in 1907 that it was the constituent which Sir A. E. Wright had termed "opsonin" and which before him Denys and Leclef, Bordet, Nolf, and others had identified as "sensitizing substance" or "sensibilisatrice." This view was also confirmed by other investigators. Referring you elsewhere for detailed evidence,[2] I shall merely submit that Léopold-Lévi and H. de Rothschild, of Paris, write in this connection in the second volume of their work on "Physiopathology of the Thyroid Gland": "Sajous has attributed, among the functions of the thyroid body, a rôle to the latter which he assimilates to that of opsonins and to autoantitoxins. More recently, Miss Fassin, M. Stepanoff, and M. Marbé have confirmed on their side the influence of the thyroid on the blood's asset in alexins and opsonins." Miss Fassin and M. Marbé have done more than this: Since by removing the thyroid body they inhibited the production of opsonins, they also sustained my opinion that the thyroid apparatus is the source of opsonins. Lorand, of Carlsbad, also referring to the confirmation of my views by European investigators, states that this proves further "the intimate relationship between the thyroid and our immunizing functions." Frugoni, moreover, found that thyroid gland markedly raised not only the opsonic index of tuberculous animals, but also the active germicidal power of their blood.

This must suffice to show that the thyroid gland—including always its parathyroids—is intimately connected with the autoprotective or immunizing functions of the body. Such being the case, and knowing that goiter, at least in some of its forms, is due to intoxication from some poison, organic or inorganic, I have also good ground for the belief, in view of the fact that infections, toxic wastes, etc., cause enlargement of the thyroid, that a defensive reaction of that organ accounts for the development of goiter.

While the disease may be the result of prolonged overactivity of the gland, characterized by typical histologic lesions of hyperplasia and

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[1] "Internal Secretions and Principles of Medicine," 5th ed., vol. i, p. 762.

[2] New York Med. Jour., Nov. 11, 1911.

hypertrophy, with symptoms of hyperthyroidism, these lesions may also occur in a gland which is unable, even under violent stimulation, to react adequately to the poison. Driven, nevertheless, to inordinate activity, it undergoes violent congestion, thus causing the development of a relatively rapid form of the disease. A description of this form, which has been termed "acute goiter" because it sometimes appears with relative suddenness —though differing totally from true acute goiter due to local congestion— and also "epidemic goiter" because several cases sometimes appear within a short period, will illustrate the difference between this and another form to be presently described.

In the *hyposecretion goiter*—we will thus term it for the sake of convenience—the growth is soft and diffuse and shows a tendency to grow larger on one side, usually the right. Although it sometimes recedes of its own accord, its tendency is to persist if the cause be not removed, and to undergo colloid, cystic, or other retrogressive changes. It is a pernicious form in the sense that in the child it tends toward the production of cretinism, and in the adult, to the corresponding condition, myxedema. Now, it is here that a careful study of the general symptoms will reveal the true nature of the trouble, the symptoms being quite characteristic, and typically those of a mild form of hypothyroidism. The pulse is slow, ranging from 62 down to 40 or even lower. This bradycardia is witnessed in all cases. There is a marked tendency to hyperidrosis, especially of the extremities, excessive sweating occurring under slight exertion and sometimes even without it. Hypothermia is habitual, though seldom marked. The urea excretion is reduced one-third. There are no pressure phenomena, unless the growth is far advanced—no dyspnea, no dysphagia. Nor are there nervous symptoms such as those that are common to hyperthyroidia and exophthalmic goiter—no tremor, no exophthalmos. Treated in time with thyroid gland and by removal of the cause, if the latter can be located, these cases recover with relative promptness.

Comparing this hyposecretion form with that due to excessive secretory activity, which we shall term *hypersecretion goiter,* we find none of the landmarks just described. Indeed, as soon as any appear other than the goitrous enlargement, they are clearly those of *larval exophthalmic goiter*— a somewhat rapid pulse, so-called "nervousness," with tremor so slight, perhaps, that it is revealed only on careful examination. As a rule, however, and in cases seen sufficiently early, there is simple enlargement of the gland without constitutional symptoms. Its shape is not modified at first, and for a time the swelling can only be discerned by palpation, and perhaps by careful inspection during deep respiration, deglutition, and coughing, which greatly accentuate the up and down motion of the gland. There are no symptoms due to pressure at this stage.

Returning to the hyposecretion goiter, it is the form which, as Kocher states, "is not usually brought to the surgeon for treatment because it can be cured by internal medication." It is the type known here as "parenchymatous goiter." This type, as Adami writes, "would seem to be an overgrowth

of the gland with overactivity, although such overgrowth may eventually give rise to atrophy and inactivity of the specific glandular substance," which means that it also may lead to cretinism in children and myxedema in adults. "It is very suggestive," continues the same author, "that in a large proportion of cases where the goiter is not of too long development and is of the parenchymatous type, the iodine treatment has for long years been found to give good results"—provided, let me add, that the source of intoxication is also removed.

The recognition of the connection of the thyroid—always including the parathyroids—with the defensive mechanism of the body, enables us also to get better results in the treatment of goiter by emphasizing the importance of endogenous intoxication in the causation of the disease. A patient may not do well, as is often the case, under iodine or thyroid gland,—or both combined, the best plan,—even when given early, avoiding strictly all cases showing signs of Graves's disease, but this will soon change if, besides giving these agents, attention is paid to any condition whatsoever: intestinal, hepatic, gastric, renal, etc., capable of provoking autointoxication. Concomitant goiter and chlorosis are occasionally witnessed in young girls; the treatment of the coprostasis so common in them will sometimes alone cause the swollen thyroid to recede. Poor or carious teeth,—possibly by hindering mastication,—suppurative foci, briefly any condition capable of producing systemic poisoning, including toxins and endotoxins, must be eliminated. In short, the successful treatment of goiter is not a mere question of thyroid and iodine. Intestinal antiseptics, the salicylates, creosote carbonate, menthol, etc., are also helpful, when intestinal functions have been regulated. This accounts for the success obtained by McCarrison with thymol, his belief being that a special micro-organism was the pathogenic factor in his patients.

The recognition of cases which are amenable to medical treatment is not difficult. Such treatment will prove effective, as a rule, when the gland is diffuse and elastic, *i.e.*, of the parenchymatous type, particularly in adolescents and young adults. In the nodular, cystic, colloid, fibrous, and intrathoracic forms, iodine is seldom of value and sometimes dangerous. I have seen a single drop of tincture of iodine cause marked toxic phenomena in nodular goiter. Yet the fact that the line of demarcation between medical and surgical cases is not always clearly defined warrants a test of the medical treatment,—while closely watching the patient,—a step which sometimes yields unexpected favorable results.

Finally, recognition of the fact that we are dealing with a reaction of an organ having for its function to defend the body against poisoning seems to me to brand goiter as a danger signal which the authorities of countries or districts in which goiter prevails should heed. They rightly quarantine sufferers of contagious diseases; but in many districts they supply water which is a menace to the health and mental development of thousands of children and adults. No water known to be capable of producing goiter should be used by a community. Even the resource of boiling fails here,

since it minimizes, but does not destroy, the pathogenic agent. Moreover, medical school inspectors should look upon an incipient goiter as evidence that the child or adolescent bearing it is being exposed to physical and mental decay through chronic poisoning, and strive to prevent it by calling attention to the need of immediate treatment on modern lines.

THE RELATIONS OF INTERNAL SECRETIONS TO MENTAL CONDITIONS.*

By PROFESSOR L. v. FRANKL-HOCHWART,

VIENNA, AUSTRIA.

In the so-called "formes frustes" of Basedow's disease the exophthalmos is often altogether absent or only suggested. In this group the mental condition is also changed. These are often grumbling, hypochondriac, melancholic, and egotistic persons. In completely developed Basedow's disease one tendency is often pronounced—namely, the predominance of manic features. The individuals are often excited, though one cannot exactly speak of a psychosis. They are talkative, spasmodic in their thoughts and actions, and sometimes incline to witticisms. In conversation they often prefer erotic subjects, and are given to sexual excesses. In the acute psychoses of these patients there may be a predominance of manic features. Opposed to the picture of Basedow's disease, of hypertrophy of the thyroid-gland tissue, is the picture of atrophy and degeneration. Most striking is the condition of the adult myxedematous patients, with the typical absence of the thyroid gland. The principal factor is the complete lack of emotion. A considerable rôle is ascribed to the thyroid gland in emotional life. According to Lévi and Rothschild, it is the "glande de l'émotion." The similarity of the picture of fear emotion and that of Basedow's disease should be remembered: The protuberance of the bulbi, the trembling, the tachycardia, the congestions which alternate with pallor, the outbreaks of perspiration, the diarrheas, and the trembling of the limbs. The myxedematous, according to Charcot, may be compared to hibernating animals: dull-witted, indifferent, unable to work, disinclined to sexual activity; the memory gradually decreases, the power of judgment becomes minimal, and the patients often lie in bed apathetically for days, almost without desire for food or drink. Severe psychoses are by no means rare in these patients. The connection between the mental condition and lack of the thyroid gland may best be studied if thyroidin be administered for therapeutic purposes.

As regards the *parathyroids* the author has described psychoses in individuals who had fallen ill of typical tetany. At the culmination of the affection, which in Vienna appears in March and April, typical tetanic attacks

* Summary of article in the American Journal of the Medical Sciences, August, 1913.

appeared, which subsided with the symptoms of somatic disorder. Similar cases have also been described by other authors, especially cases of a strumiprive or parathyreoprive form. The mood of those afflicted by tetany is not to be designated as normal, even disregarding the actual psychoses. These individuals are excitable, timid, uneasy, quarrelsome, and inclined to outbreaks of temper. Depression is occasionally present, but is not one of the dominant symptoms. In the psychoses the conditions of temper and excitement predominate. The author found among his old patients with tetany several who had grown excitable and irritable. In those who had myxedematous phenomena, symptoms of mental lassitude appeared which were not recognizable in the other forms. In strumectomized animals peculiar psychic changes have been described. Blum mentions hallucinations in strumectomized dogs, as well as changes of characteristics, idiocy, and pathologic motor phenomena. Horsley and Pineles saw similar phenomena in monkeys. Erdheim observed conditions of excitement in rats, and stated that these are connected in some way with tetany, as on the days when the animals are excited tetany often reappears.

Basch and Klosevoigt, referring to the feeble intelligence of animals whose *thymus* had been extirpated, speak of an "idiotie thymopriva."

Hypophyseal affections must be divided into two large groups, acromegalia and the dystrophia adiposogenitalis. Psychoses of various kinds in these conditions have been described. Boyle and Beadles, among 3000 necropsies at the lunatic asylum, found tumors in 20, 6 of them hypophyseal. The number of actual hypophyseal psychoses is somewhat overestimated, but the fact that psychoses are so frequent in affections of the pituitary body gives food for thought, in spite of their association at times with the destruction of tissue in other parts of the brain. The author has seen many cases of pituitary body tumor, and has noticed a psychic change, a peculiar indifference, a certain contentment, a euphoria which is not in harmony with the symptoms, such as headache and blindness. The patients are calm, and have a childish confidence in the doctor. The sleepiness of the patients is pronounced, but if they are forced to arouse themselves, their intelligence has not suffered nearly so much as we would be led to believe by the outward impression they make.

The psychic factor may best be studied by observing operated cases. The author has seen cases operated on by the Schloffer (cases of v. Eiselsberg and Hochenegg) or the nasal method of Hirsch. It is remarkable how lively, agile, and communicative the patients become. The entire psychic condition of the corpulent person partakes of that of individuals with constitutional obesity. The peculiar mental slowness, indecision, good nature, and sleepiness of these people is proverbial. Loss of hair is not uncommon.

It is not uninteresting to compare the acromegalic with the physiologic giants. They often have a peculiar heavy manner and lack of initiative. The psychic peculiarity of hypophysis patients, which the author described in a report at the International Congress at Budapest in 1909, is of interest from the fact that the animal experiments of Cushing, in Baltimore, and Aschner,

in Vienna, showed that in hypophysectomized dogs the psychic changes corresponded with those of human beings. According to Cushing, animals with hypopituitarism become psychically abnormal: at times they are lazy and sleepy, then playful and excited.

If in early childhood tumors (teratoma) develop in the *pineal gland* a picture is presented which is more intelligible since the observations of Gutzeit, Ogle, Oesterreich, Slavik, Neumann, Marburg, Bailey, and Jelliffe. The features of premature sexual development are combined with an unusual development of fat. In a boy aged 4½ years who had always been very large and somewhat fat, the genitals developed remarkably. In his fifth year erections appeared, the voice became deep and hoarse, and the body showed a hirsute appearance which corresponded to the age of 18 or 20 years. He had the symptoms of a cerebral tumor (headache, vomiting, epileptic attacks, paralysis of the eye muscles, and choked disc). He died of scarlatina. The necropsy findings showed a teratoma of the pineal gland. One point in this observation is of importance, the early development of the mental condition. The boy was overintelligent, and had an inclination to discuss ethical philosophic questions. In his fifth year he showed the same psychic peculiarities that are displayed by youths during puberty.

There were also signs of early psychic development in the cases of Oesterreich and Slavik and Raymond and Claude. The hypothesis therefore was that the pineal gland was to be considered among the blood glands, and that it influenced genital development. Its absence causes premature genital development and psychic development corresponding to the age of puberty. Descartes placed the seat of the soul in the pineal gland, and although in this form his belief cannot be upheld, still when a genius has once made an assertion, something of it will always remain.

Of the abdominal glands the *pancreas* and its internal secretion play a large part in relation to diabetes. Diabetics often show mood anomalies, and we speak of actual diabetic psychoses. We have no test for determining how far the psychic peculiarities depend on the secretory disturbances of the pancreas.

The study of *suprarenal capsule* affections gives us more positive points of knowledge. The secretion of these organs and their effect on the nervous system are generally known. The connection between disturbances of brain development and hypoplasias of the suprarenal capsules, is of importance in the subject under discussion. Leri in 3 cases of melancholia found destruction of the suprarenal capsules. At the clinic there are occasional cases of Addison's disease with a tuberculous destruction of the organs mentioned. These individuals are weak, exhausted, and hopeless, in contrast to the euphoric patients with tuberculosis of the lungs. Irritability and depression are almost always present. Psychoses of various kinds have also been observed, depression seemingly predominating.

THE INTERNAL SECRETIONS IN RELATION TO DERMATOLOGY.*

By SIR MALCOLM MORRIS, K.C.V.O.,

GREENWICH, ENGLAND.

It is probable, though the evidence is not conclusive, resting upon purely clinical grounds, that in irregular functioning of the thyroid is to be found in many cases, though not necessarily in all, the explanation of cutaneous changes similar to those met with in myxedema. In this disease the skin is cold, dry, and rough, seldom or never perspires, and may take on a yellowish tint; it presents swellings, and the mucous membranes also may be swollen. There is a bright red flush in the malar region, due to dilatation of capillaries and veins. Swale Vincent has found that the elements of the connective tissue of the derma are torn asunder, while the fibers are the seat of a hyperplastic process, and the cell nuclei and the fibrils of the gelatinous substance between the fat lobules are multiplied. The skin as a whole looks transparent, as though saturated with a semifluid substance. The hair of the scalp becomes scanty; the pubic and axillary hair, with the eyelashes and eyebrows, often falls out; in many cases the teeth are brittle and carious. As these signs disappear under the administration of thyroid preparations, there is prima facie ground for expecting benefit from the same treatment in conditions presenting more or less resemblance to them, but not associated with myxedema, such as psoriasis, alopecia, ichthyosis, and xerodermia. That expectation has been abundantly justified by experience. So often, indeed, has the author during the last two years found the use of thyroid extract followed by improvement in these and other conditions, that he now makes it a routine practice, in examining patients suffering from chronic skin affections of which the cause is not known, to palpate the thyroid. If the gland be smaller than usual, a trial of thyroid extract is suggested; if there be marked hypertrophy, thyroid medication is contraindicated. It has, however, to be remembered that thyroid insufficiency may be due not to atrophy of the gland, but to replacement of the vesicular substance by interstitial growth. Moreover, it is probable that thyroid hypertrophy is sometimes compensatory rather than morbid, the result of an effort to restore secretory equilibrium that has been disturbed by failure of some other ductless gland. Cases are recorded in which thyroid treatment has abolished cutaneous symptoms associated with thyroid excess; such cases are examples of what French authors designate *l'instabilité thyroïdienne*. It is necessary, therefore, to be on one's guard against hastily concluding that a moderate degree of thyroid hyperplasia is an indication against the use of thyroid extract.

In no skin affection has thyroid medication given better results than in *psoriasis*. Recent experience has led the author to the conclusion that one of the secrets of success consists in selecting cases in which the skin

* Summary of article in the British Medical Journal, May 17, 1913.

affection complicates other conditions in which thyroid is indicated. In obesity; in infantile wasting; in a certain type of chronic rheumatism, both articular and muscular; in osteomalacia, rickets, and delayed union of fractured bones, in hemophilia, etc., thyroid preparations are of proved utility, and whenever cutaneous affections are found associated with such conditions as these there is a presumption in favor of thyroid treatment. Thus the author has found thyroid extract specially efficacious in psoriasis associated with adiposity. Léopold-Lévi and de Rothschild report cases of psoriasis associated with chronic rheumatism in which the psoriasis completely disappeared under thyroid treatment. In psoriasis generally, the author's experience is that the treatment is more suitable for chronic than for acute cases, and he agrees with Radcliffe Crocker and with Sajous that thyroid extract should not be exhibited until the eruption is fully developed. The effect produced consists not only in lessening or abolishing the irritation, but also, it would seem, in stimulating the epidermal layers, so that the degenerate epidermis scales off and is replaced by healthy epidermis.

Obstinate cases of *pruritus* have proved amenable to thyroid. In *eczema* the author reports encouraging results. Unlike psoriasis, this affection responds to it not only in chronic, but also in acute, forms. The most responsive cases are those in fat subjects, and those, again, in which the eczema is associated with xerodermia. Léopold-Lévi and de Rothschild record 3 cases of eczema associated with thyroid symptoms which were cured or ameliorated by thyroid treatment. Marbé reports 2 cases of eczema cured by thyroid. Eason and the author successfully treated cases of eczema in young children with thyroid. Moussous has found the treatment to answer well in seborrheic eczema of the scalp.

In *ichthyosis* the author has used thyroid in a number of cases, and in none without benefit. Grünfeld and de Kornfeld have found thyroid treatment beneficial in *sclerodermia,* even when associated with Graves's disease. Léopold-Lévi and de Rothschild explain this result by the suggestion that Graves's disease and sclerodermia sometimes evolve upon a *terrain* of thyroid insufficiency. Of 9 cases of sclerodermia which they themselves submitted to thyroid medication, the treatment was finally successful in 5, but it had to be perseveringly applied. C. J. White has reported great improvement from thyroid treatment in a case of *acanthosis nigricans.* In the author's experience, thyroid has been distinctly useful in *keloid,* and he has been especially struck by its influence in alleviating the pain which is not infrequently a symptom.

Multiple warts, possibly an error of development, the author has repeatedly found to disappear under thyroid medication. *Acne vulgaris* is another affection of childhood or adolescence which responds well to thyroid extract. In one case, that of a boy of 16 who had overgrown his strength, after a month's treatment the acne was considerably less, while the accompanying seborrhea of the face and scalp had entirely cleared up, and the general health had much improved. Thyroid treatment is obviously indicated

in *acne rosacea* occurring as a result of flushing in what, for lack of a better designation, may be termed the *pseudomyxedema* sometimes associated with the menopause in fat women, who become dull, lethargic, and depressed. In such cases the adiposity, mental symptoms, and rosacea alike respond to the treatment. A remarkable case of cure of *rhinophyma,* after three months' thyroid treatment, has been reported by Dyer. Both in *lupus vulgaris* and in tuberculosis of the skin (*scrofulodermia*), the author is able to report favorably of the thyroid treatment.

In *exophthalmic goiter,* generally held to be due to excessive or perverted functioning of the thyroid, the cutaneous symptoms are the reverse of those met with in myxedema: instead of coldness, dryness, and scaliness there are heat and moisture; pigmentary changes are not infrequent, and there may also be pruritus, factitious urticaria, and purpuric erythema; but in both conditions there may be loss of hair and atrophy of the nails. In Graves's disease thyroid treatment is, of course, contraindicated; but there are cases on record in which cutaneous symptoms associated with some degree of overaction of the thyroid have been benefited by the judicious administration of thyroid extract.

The influence of the thyroid gland upon the growth of hair is unmistakable. Hertoghe records a case of entire baldness in myxedema, followed by complete restoration of hair after the use of thyroid. On the other hand, in cases of thyroid excess there is sometimes hypertrichosis. With thyroid excess, spontaneous or due to medication, there may be growth of hair on the face in women, or black hairs appear in the light-colored beards of men. Return to the normal color, under thyroid treatment, has occurred in cases of premature grayness. Examples of the effect of thyroid treatment upon the growth and color of the hair in such affections as chronic rheumatism, sclerodermia, neurasthenia, migraine, and asthma, associated with various degrees of thyroid irregularity, are reported by Léopold-Lévi and de Rothschild. There is reason to believe that the pituitary and the adrenals take part in the trichogenic function, and it has long been known that the growth of hair is influenced, directly or indirectly, by the sexual glands. Léopold-Lévi and de Rothschild incline to the view that the thyroid chiefly influences the hair of the scalp, and the sexual glands, the pubic and axillary hair, and the beard.

Both in myxedema and in Graves's disease, and also in the intermediate degrees of thyroid disorder, the nails, as well as the teeth, undergo degenerative changes. Cases in which thyroid treatment exerted a favorable trophic influence upon the nails are recorded by Léopold-Lévi and de Rothschild. The new part of the nail, nearer the matrix, became normal in color and thickness and texture, and, as is observed in convalescence from some acute affections, there was a furrow between the old part and the new. There can be little doubt that the coloration of the skin is influenced by several of the internal secretions, and also, it may be, by the liver and the abdominal sympathetic. It is significant that, as Rolleston has noted, the pigmentation in Addison's disease is an exaggeration of the normal, and

occurs, therefore, on the face, the neck, the hands, the anterior folds of the axillæ, the nipples, the perineum, and the genitals, while in more advanced cases the mucous membranes may become pigmented. There is pigmentation also in hyperpituitarism, but it is often accompanied with asthenia and low blood-pressure, which suggests that it may be due to adrenal insufficiency rather than to excessive functioning of the pituitary. The familiar pigmentary signs of pregnancy suggest that the sexual secretions may be concerned in normal coloration. There is evidence also that the thyroid is not without influence in this process. One of the signs of myxedema is the yellowish tint which the skin may present, and Lancereaux and Paulesco, and others, have found that abnormal pigmentation is beneficially affected by thyroid treatment. In *leucodermia* favorable results from thyroid treatment are recorded, but the negative results recorded by other authors suggest that a careful selection of cases is necessary. The treatment appears to answer best in diffused cases. Indications are not wanting that the rôle of the thyroid in coloration is of a regulative character. Arbuthnot Lane has described the pronounced pigmentation met with in cases of alimentary toxemia, beginning in the eyelids and thence spreading gradually over the face. The neck becomes first brown and then almost chocolate-colored. The skin of the abdomen, the thighs, the axillæ, and that covering the spinous processes of the vertebræ grows progressively darker, and on these surfaces areas of a still darker staining may develop. This observer also calls attention to the changes the thyroid undergoes in cases of intestinal toxemia. In one case, in which the patient had for eight years suffered from an enlarged thyroid, it was obvious a few days after resection of the large intestine that the gland was diminishing in size, and by the time she left the hospital it was but little larger than usual. The case does not stand alone, for he had noticed the complete disappearance of symptoms of thyroid excess in other patients after operation for intestinal stasis. Such cases suggest that the thyroid may hypertrophy in its effort to antagonize the intestinal toxins to which in these cases the abnormal pigmentation is probably due. Possibly it is in this way that the effect of thyroid medication in improving the complexion is to be explained. So powerful an agent as thyroid extract must be used with caution and its effects closely watched. As a rule, the author begins with a 2½-grain tablet, to be taken at bedtime, and after a few days doubles the dose; then, if the remedy be well borne, a tablet of the same strength is taken, in addition, after breakfast, and, later, another after dinner, and so gradually a maximum of 10 grains per diem is attained. For infants he begins with ¼ grain a day, increased to ½ grain, and occasionally to 1 grain. On the appearance of rapid pulse, nausea, headache, lumbar pain, and restlessness, the treatment must be at once suspended or the dosage diminished. In cases treated with thyroid in which arsenic would be used, as in psoriasis, the author usually employs the two agents together. The thyroid is so often and so greatly affected in acromegaly, and the pituitary in myxedema and after experimental thyroidectomy, as to suggest not merely a complementary relation between these glands when either is the subject of disease, but even

some measure of normal interaction—a suggestion which finds support in their histologic resemblances. In acromegaly there is increase in the size of the hair follicles and of the papillæ, and, as the result of enlargement and abnormal activity of the secretory glands, the skin becomes moist and greasy. There is also hyperplasia of the connective tissue of the subcutis, which may involve the muscles, and while the process of hyperpituitarism is active there is an unusual degree of hypertrichosis. The transition from hyperpituitarism to hypophyseal insufficiency is attended by a very slow but unmistakable retrogression of the cutaneous symptoms. Just as the condition of the skin in Graves's disease is the exact reverse of that in myxedema, so in primary hypopituitarism the cutaneous changes are the opposite of those in acromegaly. Cushing found that in all his patients affected with primary hypopituitarism, except the older ones, the skin was "smooth, transparent, and notably free from moisture." In some it had an infantile smoothness, such as might suggest a subcutaneous edema, though there was no pitting on pressure.

In connection with the pituitary the author refers also to the rapid growth of the long bones which often follows typhoid and other infections in young adolescents, and which comes under the notice of the dermatologist because of the patellar and other striæ produced by the tension to which the skin is subjected. In one of his own cases—that of a girl of 15 who had had scarlet fever—there were linear streaks on the thighs, abdomen, and breast, suggesting a general skeletal overgrowth. Chanal has suggested that the skeletal overdevelopment is due to bacillary stimulation of the epiphyses, but the author agrees with Cushing that it is more likely to be the result of a functional hyperactivity of the pituitary. In view of the relation subsisting between the thymus gland and the sexual system, it is possible that to irregularity in the functioning of this gland may be due some affections of the skin that occur specially in childhood and adolescence. There is now reason for believing that the thymus continues to function regularly until puberty, and it has been found that in castrated animals the gland does not at puberty undergo hypoplasia. Although its secretion has not been definitely isolated, there is much to be said for the view that the thymus furnishes secretion which is of service to the economy while the reproductive organs are undergoing development. Some cases of acne, therefore, may possibly be due to insufficiency or excess of its secretion. Similarly there appears to be some connection, as Sabouraud has suggested, between large and active sebaceous glands and overactivity of the testicle; this may account for the frequency of seborrhea in virile and hairy men and its rarity in women, who, when the subjects of it, are generally of the masculine type. It is significant that acne in women often coincides with the menstrual periods.

Neither thymus nor pituitary nor suprarenal preparations have yet been extensively used in dermatology. But the author has employed thymus gland extract with advantage in *acne* associated with enlarged thyroid and rapid heart, and has had encouraging results from pituitary gland extract, and also from suprarenal extract, in *persistent urticaria* and *angioneurotic edema*, con-

ditions in which French authors report improvement under thyroid treatment. He has also found benefit to follow the use of suprarenal extract in *lupus erythematosus,* possibly owing to its influence upon the vasomotor centers. This condition is amenable to radium and carbonic acid snow; but it is not a merely local affection, and when the lesions disappear under local treatment there is always a possibility of recurrence. It is desirable, therefore, that further trial be given to any agent which holds out the promise of beneficially affecting the constitutional condition.

The facts that animals from which the hypophysis has been partially removed betray diminished power of resistance to infections, and that pituitary hyperplasia has been found associated with bacterial intoxications, may possibly prove to be charged with significance. It is conceivable that irregularity of this or other organs of internal secretion may be the direct cause of certain obscure skin diseases, and that in others it may induce the predisposing condition which is the opportunity of bacterial or other pathologic influences. Thus, too, may possibly be explained the tendency of so many skin affections to recur after the lesions have disappeared under empiric treatment.

THE TREATMENT OF GOITER.*

By CHARLES H. MAYO, M.D.,

ROCHESTER, MINN.

The administration of iodine both internally and externally is one of the oldest forms of medical treatment for goiter, but even now, after the enormous amount of study which has been made of the relationship of the iodine content of the thyroid in relation to the symptoms of Graves's disease by Baumann, Marine, Hunt, Smith and others, the administration of the drug is still far from being on a scientific basis.

As a preparation for thyroidectomy in severe cases of hyperthyroidism, rest treatment to quiet the heart improves active symptoms. The use of the Röntgen ray will sometimes cause temporary amelioration of the more severe symptoms, and in the still more serious cases of this type the injection of 1, 2 or 3 drams of boiling water (Porter's method) into a lobe of the gland acts favorably in improving the condition of the patient.

From results so far obtained it seems indicated that the vessels and at times a portion of the gland should be ligated in certain cases: (1) In those patients suffering from mild symptoms of hyperthyroidism which are hardly severe enough to warrant a thyroidectomy; (2) in that large group having acute, severe exophthalmic goiters, and the chronic and very sick patients who, having exhausted all forms of treatment, are now suffering from various secondary symptoms, and (3) in cases of marked pulsation and thrill of

* Summary of article in Northwest Medicine, December, 1913.

the thyroid arteries associated with dilatation of the heart and loss of weight. Great improvement follows the ligation in these cases and later thyroidectomy is advised, since there may be a relapse to the former condition. Should the condition recur before a partial thyroidectomy is made, or should a severe relapse occur after partial extirpation, the inferior thyroid artery should be ligated and half the remaining lobe removed when improvement occurs. In surgical operations on exophthalmic goiters the mortality at present varies from 1 to 3 per cent. The causes of death are acute hyperthyroidism, embolism, pneumonia, hemorrhage, sepsis, etc.

The treatment of toxic non-exophthalmic goiter (Plummer) is, in the mild or early stages, practically the same as that of simple goiter. In its severe or advanced stages the mortality is as high or higher than that of exophthalmic goiter of similar severity and stage of symptoms. The term "simple" goiter should be dropped and the term "atoxic" substituted as covering the majority of the cases, while those cases which present any toxic symptoms should be described as "toxic non-exophthalmic." The operative treatment for the uncomplicated, non-toxic thyroid is approximately the same as that for the simpler types of exophthalmic goiter, section of the muscles not often being required, however. Operations on adenomas, colloid thyroids, or diffuse adenomatoses, as a rule, involve but slight risk to the life of the individual. Many patients who are so afflicted wish to be relieved of the deformity, tracheal pressure, hoarseness, or possibly of a severe neuralgia.

Intrathoracic goiters and deep substernal goiters are of serious import and are found about once in 40 operations for simple goiter. Slight substernal projections are much more frequent. The diagnosis rests on (1) dull area on percussion; (2) the röntgenogram, and (3) evidences of substernal pressure. Probably one-sixth of the original gland-cells are competent to furnish all secretion necessary. It is best, therefore, to preserve this much of the gland until there is more evidence furnished that all of it can be removed with no ill effects, as is claimed by some surgeons in their treatment of exophthalmic goiter. Less than 1 per cent. of the cases operated on in the Mayo clinic show malignancy. Both cancer and sarcoma occur, the former with much greater frequency. The diagnosis should, if possible, be made before the growth has penetrated the capsule and involved the neighboring structures, *e.g.*, the trachea and muscles. The only treatment affording any hope of relief is removal of the entire thyroid tissue. Unfortunately early glandular and lung metastases are common. When recurrence takes place the process is more rapid than before operation.

THE CLINICAL AND PATHOLOGIC RELATIONSHIP OF SIMPLE AND EXOPHTHALMIC GOITER.*

By H. S. PLUMMER, M.D.,

ROCHESTER, MINN.

A CONSIDERABLE percentage of cases of so-called simple goiter show constitutional symptoms. Wilson, in 1908, after reviewing the available pathologic material from the cases that had been diagnosed exophthalmic goiter at the Mayo clinic, pointed out that only 80 per cent. of the glands showed hyperplastic changes. Recently the cases of goiter under observation have been classified pathologically as (1) hyperplastic and (2) non-hyperplastic, and clinically as (1) hyperplastic toxic, (2) hyperplastic atoxic, (3) non-hyperplastic toxic, and (4) non-hyperplastic atoxic. The glands showing marked hypertrophy were included with the hyperplastic goiters. Following this classification for the 2917 new cases coming to operation between January 1, 1909, and January 1, 1913, 42.8 per cent. were hyperplastic and 57.2 per cent. non-hyperplastic. Of the hyperplastics 99.2 per cent. were toxic and 0.8 per cent. atoxic. Of the non-hyperplastic 23.3 per cent. were toxic and 76.7 per cent. atoxic. Patients coming under observation with non-hyperplastic toxic goiter gave a history of having first noted the goiter at the average age of 22 years, and the evidence of intoxication at the average of 36.5 years. The corresponding ages for hyperplastic goiter were respectively 32 and 32.9 years. These differences alone were sufficient to show that at least two distinct pathologic and clinical groups were being dealt with. Should all toxic hyperplastic goiters be included under the term exophthalmic goiter? From his statistical studies the author concludes that it is quite possible that exophthalmos may be associated with non-hyperplastic toxic goiter, but, if so, this is so rare that it must be in a way considered accidental. Is the symptom-complex accompanying hyperplastic goiter to be directly attributed to disturbed thyroid function? That such is the case is indicated by the fact that an individual aged 22 years with an adenoma of the thyroid has a definite chance of developing a train of symptoms during the thirty-sixth year so similar to the symptom-complex associated with hyperplastic thyroid that the best-trained diagnosticians are constantly confusing the two conditions. Can one associate the symptom-complex of non-hyperplastic toxic goiter with any definite pathologic change in the thyroid? For the present this question must be answered in the negative.

On the whole, one may safely conclude that exophthalmic goiter is a definite clinical complex always associated with hyperplasia of the thyroid, and that it should be sharply distinguished from the constitutional state or states that may develop with non-hyperplastic goiter. The intoxications from

* Summary of article in the American Journal of the Medical Sciences, December, 1913.

non-hyperplastic goiter may be divided into two merging groups: (1) a group in which the cardiac toxin predominates and in which the clinical picture closely resembles, and in many instances cannot be differentiated from, the cardiovascular complex resulting from alcoholic, luetic, septic, and other well-known toxins; (2) a group more closely approaching the picture of Graves's disease and including the cases that have been erroneously so diagnosed by the mass of the profession. The average lapse of time between the appearance of non-hyperplastic goiter and toxic symptoms is 14.3 years. That the patient comes under observation three years later indicates that the onset is usually insidious. Nervousness, tremor, loss of strength and weight, as a rule, develop slowly, but may appear suddenly long before definite evidence of myocardial damage. Administration of iodine may cause the sudden appearance of these symptoms with myocardial insufficiency, much as they might follow the prolonged drinking bout of an old toper who had not previously shown decided evidence of chronic alcoholism. In some cases the clinical aspect closely approaches that of exophthalmic goiter. However, the symptoms are less complex, less definitely associated, and, except for a damaged heart, less intense. There is much evidence to suggest that during the 14.3 years previous to the onset of definite toxic symptoms many of the cases of non-hyperplastic thyroid may be compared to the alcoholic tippler in that if the soil is right they develop arteriosclerosis, in many cases showing the combined picture of thyrotoxicosis and arteriosclerosis. The development of a typical syndrome of Graves's disease in a case having a definite history of simple goiter means that a hyperplastic goiter has been superimposed upon the simple type.

The onset of exophthalmic goiter is, as a rule, relatively acute and the course of the disease fairly definite. The clinical picture early in the history is that of a toxin acting directly on the more vital organs, more notably the central nervous and vascular systems. Later it is made more complex by the interaction of those organs whose functions have been directly disturbed by the toxin. The order of onset of the most important symptoms, based on the average of the Mayo clinic series, is: (1) cerebral stimulation; (2) vasomotor disturbances of the skin; (3) tremor; (4) mental irritability; (5) tachycardia; (6) loss of strength; (7) cardiac insufficiency; (8) exophthalmos; (9) diarrhea; (10) vomiting; (11) mental depression; (12) jaundice, and (13) death. If the average course of the intoxication be represented by a curve the greatest height is reached during the latter half of the first year, and then suddenly drops to the twelfth month. In many instances it reaches the normal base-line during the next six months. More often it fluctuates with periods of exacerbation for the next two to four years. Secondary symptoms and exophthalmos may remain, but the active course only rarely continues over four years without distinct intermissions. One may note the striking resemblance of the character, order of onset, and course of this train of symptoms with that resulting from the heavy use of alcohol by a susceptible individual over a corresponding period of time. Near the crest of the curve any shock, operation, etc., that treats the patient to another drink may

result in tremens or death. In the average course after the first year the symptoms that may be attributed to long-continued intoxication rather than to a high degree of acute intoxication, *i.e.*, those from the more chronic types of heart, liver, and degeneration of the kidney, enter strikingly into the clinical picture. In attempting to construct a composite curve we find that the curves for those symptoms that we can readily attribute to a high degree of immediate intoxication from the thyroid gradually drop while the curves for those findings attributable to a long-continued intoxication of a lower degree gradually rise.

There is much evidence to suggest that the sudden onset of the toxic symptoms is preceded by a period during which the patient is gradually habituated to the disturbed function of a developing hyperplastic thyroid, and that following the disappearance of the clinical manifestations of the intoxication, the patient is still taking care of the products of an overactive gland; if this overactivity, with or without clinical manifestations, continues sufficiently long in an individual prone to arterial degeneration, arteriosclerosis with secondary contracted kidneys, high arterial tension, etc., will ultimately develop. The picture of thyrotoxicosis from both hyperplastic and non-hyperplastic goiters may be compared to that from alcoholism in its various degrees and manifestations, varying with the dose, length of administration, and susceptibility of the individual.

HOW FAR HAVE WE GOT WITH THE CLINICAL USE OF THE INTERNAL SECRETIONS ?*

By WILLIAM N. BERKELEY, A.B., Ph.B., M.D.,

NEW YORK, N. Y.

Thyroid medication has not received the attention it merits in the treatment of thyroid enlargement in young girls just past puberty. In these patients a parenchymatous enlargement often develops by reason of the great metabolic demand upon the resources of the thyroid during rapid growth. Small doses of thyroid gland twice a day in such cases have a remarkable effect in reducing the struma to normal size. Thyroid gland, on the other hand, is strongly contraindicated in Graves's disease. In pathologic obesity, the behavior of thyroid is extremely uncertain. The use of thyroid has been recommended in the case of children who are beginning to suffer from adenoids. In early cases and in doses carefully adjusted to each case it appears to make good, but after the condition has progressed to the point of mouth-breathing, resort should be had to the surgeon. One should be sure to get a reliable preparation of the gland. The market is full of uncertain and dangerous makes, which are neither standardized nor fresh.

* Summary of article in the Old Dominion Journal of Medicine and Surgery, May, 1913.

Parathyroid.—In paralysis agitans parathyroid treatment has latterly become almost coextensive with medical knowledge of the disease itself, and the results have been increasingly favorable. Of the patients who have used a preparation made after the author's formula about 80 per cent. have been benefited, and 60 per cent. have been greatly and permanently improved. In any real case of tetany—postoperative, infantile, gastric, or other—parathyroid is a rational and helpful remedy. It should not be expected to have any effect in organic nervous disease where the characteristic spastic position of the fingers and toes is temporary and accidental.

Testis.—This is a valuable remedy after surgical removal of the testes, in double tuberculous orchitis, in atrophy of the testes, in functional impotence, and in certain cases of excessive obesity in elderly men developing after their sexual powers have failed. There are some cases of arrested development in large boys where testis supplies a chemical deficiency in the organism. When boys of 18 or 20 years, of fair mentality, have a childish voice, no pubic hair, and no sexual desire nor erectile power, testis is indicated and often gives a very fair measure of success. The use of this remedy should be much more extensive than is now the case.

Pituitary.—The posterior part of the pituitary is made up of nerve tissue and has no concern for us, but the *pars anterior* and *pars intermedia* are both secretory. In the author's opinion the popular commercial extracts of pituitary, derived from the raw gland by high degrees of heat and the use of strong acids, do not represent the real gland. Such extracts may perhaps have the clinical effects claimed for them, but it is highly unlikely that the normal pituitary secretes any such substances in its normal state. As the author has not satisfied himself as to the differences between the fore- and mid- gland, he usually prescribes the entire gland. This he finds to be of specific value in arrested physical growth when this condition is encountered without complications. The value of the remedy was first impressed upon him by the case of a boy of 17 years who had the voice and stature of a child of 9. The boy was well advanced in his classes, intelligent, a monitor at school, and of gracious and pleasing manners, but was in despair because of his size. Since he began taking pituitary "entire," he has slowly begun to grow, and is now some 3¾ inches taller than a year ago, with a stronger voice, a fresh growth of pubic hair, and a little down on his upper lip. He has never felt so active and well as since he began the remedy. Several other cases have behaved in the same way. Theoretically one could produce acromegaly by giving pituitary for an indefinite period, but this patient is so far growing normally.

In the curious and rare condition of excessive obesity and genital atrophy (*hypopituitarism*) described by Harvey Cushing and others, pituitary gland (*pars anterior*) is indicated specifically. There seems ground to think that pituitary is also indicated in osteomalacia, in defective ossification generally, and in ununited fractures. It is certainly contraindicated in acromegaly.

Thymus.—Clinically, there can no longer be much question that, when

properly prepared, thymus is of the greatest value in many cases of arthritis deformans. The author knows of a dozen or more recent cases where the good effect has been gradual but permanent. Pain and swelling (*not* the bony deformities) have disappeared, and the patient recovered his appetite and courage and returned to work. The nucleoproteid extract is very much better for these cases than the crude gland. A course of treatment should cover several months, and small doses should be continued for some time after apparent clinical cure.

Ovary.—The author uses only corpus luteum, as it seems quite certain this is the only part of the ovary that secretes internally. He gives it in the toxemias of pregnancy, in excessive obesity in women after the climacteric, in the nervous disturbances appearing with the approach of the climacteric, and after total excision of the ovaries. In treating early and mild cases of Graves's disease in virgins, he likes to begin with corpus luteum. Abundant experience has shown it to be a useful antidote to thyroid toxins circulating in excess in the blood.

When menstruation is painful and deficient in young wives who have been curetted properly and still fail to conceive, giving corpus luteum may assist in the conversion of the uterine mucosa into a normal decidua. Such a procedure may cure a certain percentage of the cases of female sterility; it is certainly worthy of a fair tryout.

Mammary Gland.—The administration of mammary gland will certainly correct many menstrual irregularities of various kinds—flooding, amenorrhea, pain. Tumors of the ovary, probably simple cysts, sometimes disappear under the action of mammary gland.

Adrenals.—The numerous commercial adrenal "extracts," useful as they are in many ways, should rather be called derivatives of the adrenal gland. They are prepared by chemical methods which must certainly destroy the sensitive proteids of the fresh gland. It is very improbable that a single one of them exists as such in the organism. To get the real physiologic effect of the suprarenal gland, either the entire gland must be given or the nucleoproteid or globulin extract. If this plan had been followed in the past, the author has no doubt that the lives of many sufferers from Addison's disease might have been saved.

Adrenal gland given for a few weeks has a curious stimulant effect upon the sympathetic. The pupils may become unequal from stimulation of the dilator fibers, the light reflex disappear, and the patient may fear—or his doctor for him—that locomotor ataxia is developing. It is possibly this effect that makes the gland of value in certain cases of paroxysmal vomiting of a chronically recurrent character where no organic disease of the stomach can be discovered. A certain neurologist believes adrenal to be of the greatest value in certain cases of idiopathic epilepsy, and has reported some recent cases in which there seems no doubt that the drug was of marked efficiency.

Pineal Gland.—The pineal gland appears to have a definite and important function—that of promoting the development of the human nervous system.

How it so acts can only be surmised at present, but presumably the gland supplies a minute amount of intracellular ferment accelerating the growth of the gray matter of the brain. In metabolic experiments upon young animals Dana and the author were able only to hasten somatic development, but when giving it to defective children they found that in most cases where there was no grave organic defect of the brain, the mentality showed a steady and gratifying improvement lasting over the whole period of administration. It has also occurred to the author that pineal gland will arrest or retard many cases of premature senile decay of the mental faculties. He has had encouraging success so far in this direction.

Abstracts from Current Literature on the Internal Secretions

Relationship of the Thyroid Gland to Alimentary Toxemia.— Evidence is accumulating to show that, among the many functions of the thyroid gland, one of the most important is a protective action against circulating toxins. Complete removal of the thyroid leads not only to myxedema, but also, as is well known, brings with it a considerable risk from a rapidly fatal toxemia, an important manifestation of which is the symptom-complex known as tetany. On very good grounds tetany is thought by many to be produced by toxins generated in the alimentary canal. It occurs in gastric dilatation where stagnation is great, and disappears if the stomach can be washed out; moreover, in such cases a substance has been isolated from the gastric contents by Bouveret and Devic which, when injected into animals, has reproduced the clinical picture of tetany. The author has described a series of cases where the same syndrome accompanied dilatation of the colon and was only relieved by colonic lavation. Tetany is most frequent in rickety children in whom some degree of atony and dilatation of the stomach and intestines is common, and is almost invariably preceded by an unhealthy condition of the stools. It seems a reasonable inference that the thyroid gland, among its antitoxic functions, includes that of combating poisons absorbed from the intestinal tract. Lane, Rowell, and Carson have all seen ileosigmoidostomy followed by shrinking of a goiter.

Another clinical link in the chain of evidence is afforded by rheumatoid arthritis, a disease not uncommonly accompanied by enlargement of the thyroid gland, by Graves's disease, and by tetany or a condition of the hands and feet closely resembling it, and which is also regarded by many as an effect of oral sepsis or intestinal intoxication. Rheumatoid arthritis is occasionally distinctly benefited by the administration of thyroid extract.

Farrant, studying the effects of various types of clinical toxemia upon the thyroid gland, found signs of hyperplasia and increased functioning, amounting in some cases to the changes found in Graves's disease. This held true for such diverse toxemias as those of infantile diarrhea, diphtheria, measles and bronchopneumonia, and whooping-cough and bronchopneumonia. A similar hyperplasia was caused in guinea-pigs by the injection of diphtheria toxin, but was mitigated if thyroid was given at the same time.

Equally conclusive inferences are to be drawn from the researches of R. McCarrison, who has shown beyond dispute that thyroid enlargement can be produced experimentally in man, within a few weeks, by the administration of suspended matter separated by filtration from goiter-producing waters, and can be cured by thymol. He has also caused goiters to dwindle or disappear by using vaccines prepared from different organisms. The good results thus obtained led the author to try a similar method of treatment. The vaccines generally employed were prepared from the coliform bacilli of the patient's own bowel. The bacterial growth was obtained from the feces by culturing on Musgrave's medium, which consists of beef extract, 0.5 Gm.; sodium chloride, 0.5 Gm.; agar, 20 Gm.; tap water, 1000 c.c., and is of an alkalinity of minus 1. This gives a growth of coliform bacilli of fairly constant character. The initial dose was usually 125,000,000 of the dead organisms, suspended in about 1 c.c. of saline. Subsequently, if the goiter showed signs of diminishing, the dose was increased weekly by 25,000,000 or 30,000,000. As a rule, the injections were given at weekly intervals.

In the few cases so far treated, 8 in all, the results have been very encouraging. In one case the goiter disappeared entirely, and in all the others it diminished. As a rule, after the first injection the tumor becomes softer, and after subsequent doses gradually gets smaller, although occasionally periods of quiescence supervene.

Another effect was that, by producing absorption of the parenchymatous enlargement, adenomata previously undetected became obvious, and operative treatment was thus facilitated. F. Langmead (Lancet, May 17, 1913).

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Exophthalmic Goiter and Frommel's Disease.—Frommel in 1882 wrote concerning the possibility that in many women, at the close of lactation, the uterus might undergo involution to so marked a degree that *restitutio ad integrum* could not subsequently take place. Since that time Frommel's disease has been the term applied to a condition characterized by atrophy of the uterus and prolonged lactation, and in which the latter appears as the sole cause of the atrophy. The author of the present paper reports a case in which the retrogressive change in the uterus was explainable either by galactorrhea and prolonged lactation or by an attack of hyperthyroidism which passed into Graves's disease at the menopause. The patient's pregnancy, at the age of 24, had been pre-

ceded by "nervous attacks" and followed, after the child had been nursed for seventeen months, by gradual diminution of the menstrual flow, atrophy of the uterus, and sterility. During the same period of gestation and lactation, marked swelling took place in the neck. The menopause supervened at the age of 48, and at 55 the typical symptoms and signs of exophthalmic goiter were present.

It is now well known that utero-ovarian atrophy may be a result of Graves's disease; likewise, that amenorrhea is frequent in the latter disease, which, on the contrary, begins to retrogress when the periods reappear. This has led Pinard to suspect a close relationship between exophthalmic goiter and ovulation. Ovulation and menstruation being almost always synergistic and correlated processes, Graves's disease may be said to contribute, with prolonged lactation, to uteroannexal sclerosis in certain cases. The thyroid enlargement presented by the author's case tends to show that no antagonism exists between the mammary and thyroid functions, and Bramwell has pointed out that an increase in the mammary secretion may be noted in wet-nurses subjected to thyroid organotherapy. In fact, the relationship between the thyroid and the mammæ is so close that in one case Djemil Pacha saw a myxedematous state follow the excision of hypertrophied mammary glands.

On the whole, Frommel's disease, according to the author, is an interesting illustration of the physiologic antagonism existing between certain glands which excite the cortex and vagus (ovaries, pancreas, etc.) and others which excite the sympathetic (thyroid, mammæ, etc.); whence the conclusion that, in nervous women with a tendency to excessive sympathetic functions, the child is not unalterably entitled to his mother's milk. To such patients especially should apply Frommel's own advice to keep a most careful watch over the condition of the reproductive apparatus, and where abnormally marked retrogressive changes in the uterus appear, to discontinue lactation at once. Maurice (Lyon médical, August 24, 1913).

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Pituitary Röntgenograms.—The author reviews the known facts in regard to diseases of the hypophysis and their diagnosis, with special reference to the X-ray findings. Describing the normal variations seen in the form and dimensions of the sella turcica, he states that its normal limits are 15 mm. in the anteroposterior diameter and 10 mm. in the vertical. It is necessary, however, to take into consideration the other internal secretory glands, especially the sexual organs. While castration is known to cause enlargement, this is opposed to the non-enlargement in the so-called "eunuchoid type," in spite of the many resemblances of the latter groups to true eunuchs. In pregnancy, increase of the sella has been observed, and it is not infrequent in old multiparæ. The condition of the thyroid also must be considered, as enlargement of the sella turcica can be demonstrated in many cases of myxedema. The two commonest varieties—the short and rather deep, and the long and

rather flat types of sella—seem to be dependent in some way on the shape of the skull (Schüller); the first was found as a rule in the brachycephalics and the other in the bradycephalics. According to Fitzgerald, the size of the sella always corresponds to the length of the posterior portion of the base of the skull, but it is in indirect proportion to the distance from its anterior wall to the ethmoidal spine. The size of the sphenoidal cells also seems to have some relation. Of course, the X-ray does not show the gland itself, and important conclusions in regard to its disorders can only be deduced from the changes in the bony parts, enlargements and thinnings. The order of appearance of the changes in the sella turcica and its parts, as shown by Erdheim and Schüller, is quite different in cases of tumor of the gland itself from that when an external tumor is pressing upon it. In the former case there is enlargement and thinning from within, and in the latter from without. But in advanced cases it may be difficult to make a differential diagnosis. Intracranial pressure due to tumors having no topographic relation whatever to the gland may also sometimes cause changes. Thus with tumors of the acusticus changes have been observed in the sella—a rather characteristic forward inclination and thinning of the dorsum sellæ—which aid in their diagnosis, especially when occurring with the enlargement of the meatus acusticus described by Henschen. Luger (Journal of the American Medical Association, September 6, 1913).

* * *

Examination of the Ductless Glands in Eight Cases of Dementia Precox.—The studies of the authors were prompted by the view that in dementia precox one has to do with a state or states of autointoxication. While this view is not uniformly held, there is reason to believe, notwithstanding, that it best explains the clinical findings. The fact that dementia precox begins in the years when developmental changes are greatest—the years of puberty and adolescence—is extremely suggestive. During this period extraordinary demands are made upon the vitality of the organism.

In the authors' paper 8 autopsies are reported in detail. A notable point in the ductless gland findings was the underweight of the thyroid in 7 of the 8 cases. In addition, 3 of them showed abnormalities, quantitative and qualitative, in the colloid of this organ, and 4, decided regressive changes in the acinar epithelial cells. The parathyroid findings could not be regarded as of significance. This applied also to the parotid and thymus. The most constant feature in the adrenal picture was the small amount of fat in the cells of the cortex of this organ, especially those of the fasciculata. If this is to be regarded as indicative of functional change it indicates lessened activity. In the hypophysis there was less colloid than is usually found in a series of these glands, but so little is known regarding the morphologic attributes of function in this body that this, as well as the number of eosinophile cells, could

hardly be regarded as pathologic. Without attempting an interpretation of the histologic conditions the authors consider themselves at least justified in the conclusion that in their cases there was in all probability a disturbance of what Sajous has called the "adrenal system"—*i.e.*, of the chain made up of the pituitary, the thyroid, and the adrenals. Especially was change noted, *e.g.*, striking departures in weight, in the thyroid and adrenals. F. X. Dercum and A. G. Ellis (Journal of Nervous and Mental Disease, February, 1913).

* * *

Pituitary Medication in Intestinal Motor Inactivity.—Pituitary preparations constitute, according to the authors, the most active agent known for inducing intestinal contractions. They employ an extract each cubic centimeter of which contains the active principles of 0.2 Gm. of fresh posterior lobe of the pituitary from the ox. Subcutaneous injection of 1 c.c. is quite painless. With 2 c.c., defecation will frequently follow after the lapse of one or two hours, but 3 c.c. is the standard dose for adults, and will cause an evacuation in 88 per cent. of cases in from six to twenty minutes—occasionally only after an hour. The series of cases in which the effect of pituitary was tested numbered 200. Doses larger than 3 c.c. fail to produce a more marked effect, and, on the other hand, induce painful bowel contractions and unpleasant general symptoms, such as pallor, tachycardia, and vomiting. With the 3 c.c. dose, pain was never marked, except in one case already suffering from colitis. The constipation, overcome by the use of the drug, nearly always returns. Frequently, however, a single injection will induce several stools on the same day and keep the bowels regular for a day or two after.

Pituitary extract may be administered to establish a distinction between paralytic and mechanical ileus, though in the latter case danger may be entailed if the intestine is diseased and there is an absolute obstruction to the passage of fecal material. In surgery and obstetrics an injection of pituitary extract is an excellent prophylactic and curative measure for postoperative intestinal paresis, as the authors had occasion to observe in 11 cases. Besides, the action of the drug on the circulation is a favorable one, and its diuretic effect aids in the elimination of toxins. Continued for a time, pituitary medication seems to exert a tonic effect on the intestine, and it simultaneously stimulates gastric motility. To obtain a lasting effect from the pituitary preparation, ½ c.c. should be given intramuscularly every day for a week, then 1 c.c. every three days for another week, and then 1½ c.c. once a week as long as the treatment is kept up. Pituitary treatment is, from theoretic considerations, probably contraindicated: (1) In cases of ulceration or gangrene of the intestine where there is a possibility of the gut yielding to unusual tension; (2) in circumscribed peritoneal inflammations, where extension of the disease process must be avoided, and (3) in acute or spasmodic affections of the intestine, because of the pain that might follow. B. A. Houssay and J. Beruti (Presse médicale, July 26, 1913)

A Case of Hypernephroma.—Report of a case of precocious development of the external genitalia due to hypernephroma in a girl of 7 years. She had begun to show a growth of pubic hair at one year, and developed bodily very early. At the age of 7 there was a profuse growth of hair on the pubis, in the axillæ, on the chin and the upper lip. The skin of the abdomen and legs was rough and there was acne of the face, but without pigmentation. She was mentally precocious, and remarkably strong. Her voice was coarse and deep. She was affectionate, played with dolls, but preferred to give rather than receive caresses. At the age mentioned an abdominal tumor was found in the right hypochondriac region, without enlargement of the superficial lymph glands. The clitoris was an inch long, half an inch in diameter, and notched on the under surface, suggesting hypospadias. At operation an enormous perivascular and adherent hypernephroma of the right kidney was removed, with death three hours after operation. The tumor occupied nearly the entire abdominal cavity. The uterus and ovaries were infantile. The left kidney and adrenal appeared normal. The lungs showed a moderate degree of metastasis. Microscopic examination of the tumor showed hypernephroma, with much tissue of the type of the adrenal cortex. No right adrenal body was found.

Reviewing other cases previously reported, one of the authors notes that, of these 18 cases, 14 were girls. One can differentiate these cases from true sexual precocity in girls by the presence in the latter condition of menstruation, enlargement of breasts, and retention of female characters, and from similar conditions in boys by the development of the penis and testes. All of the 18 cases died before the sixteenth year. With the syndrome presented by the case reported there is presumptive evidence of hypernephroma of the adrenal cortex. Exploratory operation should be done early, even before a tumor is palpable; with a tumor present, removal is imperative. H. D. Jump, Henry Beates, Jr., and W. Wayne Babcock (Pediatrics, July, 1913).

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Pituitary Extract in Puerperal Eclampsia.—Report of 2 cases of puerperal eclampsia in which the use of pituitary extract was followed by successful results. Case I was aged 42; V-para; the seizures began at 1 A.M. When seen the patient was comatose and cyanotic. Gestation had reached term, but there were no pains. The os was closed. The urine showed albumin, 5 per cent. There was sodium chloride retention. The patient received 1.19 c.c. of hypophysis extract and 0.02 Gm. of pantopon. The convulsions, which had been continuous from the first, ceased within a half-hour. At 4 A.M. she became conscious, and the os was found to admit a finger. A second injection of hypophysis extract was then given. At 6 A.M. a healthy child was expelled, and the placenta followed in five minutes. The mother completely recovered, but showed a trace of albumin in the urine for months.

Case II was aged 23; II-para. She was in the sixth month of

gestation. Convulsions set in at 11 P.M. She became unconscious and attacks of convulsions were incessant. The face was swollen and the legs edematous. Pulse 140, small. Anuria. The os was closed. Digitalis and diuretin given by mouth were vomited. Pituitary extract and pantopon were injected in same quantities as in first case, and the convulsions ceased within three-fourths of an hour. At 2 A.M. the os admitted a finger. Diuresis reappeared, the urine containing an abundance of albumin. A second injection of pituitary extract was given. At 4 A.M. a six months' fetus was expelled alive, the placenta immediately following. The fetus survived fifteen minutes. The patient recovered fully in eight days, and the last traces of albumin disappeared in four weeks. Schlossberger (Medical Record, from Deutsche medizinische Wochenschrift, May 29, 1913).

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Röntgen-ray Treatment in Thymic Asthma.—Two infants, respectively five and ten months old, with thymic asthma were successfully treated with the X-rays by the author. In the first case the symptoms had appeared in the third, and in the second case in the tenth, month as a sequel to bronchopneumonia. There were loud stridor in breathing and prolonged coughing spells with asphyxial manifestations. During inspiration the clavicle receded, while in expiration it was projected forward, and the upper portion of the thymus gland could then be felt. There was dullness above the sternum, the lymphatic glands throughout the body appeared to be enlarged, the spleen was plainly palpable, and the tonsils were hypertrophied. The first child was admitted at the clinic three times and received in all 42 X-ray treatments. In the second case 32 treatments in succession were given, but with gradually decreasing dosage, so that dermatitis at no time resulted. Both children were relieved of their asthma, the area of dullness above the sternum became distinctly smaller, and, with an X-ray examination, contraction of the thymus gland could likewise be observed. In the first case the stridor also completely disappeared; in the second it was merely considerably reduced, the lymphatic and splenic enlargements, as well as the other abnormalities referable to the lymphatics, remaining unchanged. The author considers thymectomy indicated only in severe cases that threaten life. In the other more favorable cases, with asthma and stridor, recovery should generally be induced by prolonged X-ray treatment, at first daily, with moderate dosage. Children of lymphatic habit should be kept under observation, and if signs of a latent thymic enlargement are noticed, treated prophylactically with the X-rays. Luzzati (Rivista ospedaliera, August 31, 1913; Zentralblatt für Chirurgie, December 20, 1913).

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Alopecia Areata and the Reproductive Functions.—The author presents a comprehensive study of the etiology of alopecia areata which leads him to conclude that there exists a more or less intimate and obvious relationship between genital disturbances and this disorder. In the

female sex there is a form of alopecia that follows the menopause and even a prolonged suppression of the menses. Such alopecia may be either mild or severe. This disease may also follow oöphorectomy, and here again the prognosis is variable. In less frequent instances alopecia appears, usually in a mild form, in the course of several consecutive pregnancies. In one case alopecia was observed to appear in a man suffering at about the same time from bilateral tuberculosis of the testicles, and became complete and permanent even before double orchidectomy had been practised. R. Sabouraud (Annales de dermatologie et de syphiligraphie, February, 1913).

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Organotherapy in a Case of Acromegaly With Psychic Disturbances.—The author presented a patient admitted to an institution three times for attacks of melancholic depression. Unmistakable signs of acromegaly were present, but neither radiography nor examination of the ocular fundus showed a tumor of the hypophysis. Organotherapy having been taken up, all the symptoms became considerably worse while the patient took pituitary extract, whereas the administration of a thyroid preparation instead coincided with disappearance of the headache, dizziness, and vomiting, and an improvement in the mental state. Renewed pituitary treatment caused all these symptoms to reappear, after which they yielded again to thyroid treatment. Salomon (Société clinique de Médecine mentale, Paris; Presse médicale, December 13, 1913).

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Adrenal Gumma.—The authors report a unique case in which a large gumma was found in the center of the right suprarenal at autopsy. The left suprarenal showed compensatory hypertrophy. The patient was a man 43 years of age treated with salvarsan for recently acquired syphilis. Four months and a half later a "stroke" took place, followed by symptoms suggestive of the nervous syndrome described in 1902 by Babinski and Nageotte. Death took place two months after the attack. On post-mortem examination there were found softening of the upper portion of the right lobe of the cerebellum, the adrenal gumma, and fibrous nodules in the kidneys. There was no trace of tuberculosis. Inoculation of guinea-pigs with the adrenal gumma showed absence of tuberculous infection in this organ. L. Bériel, P. Durand, and E. Malespine (Lyon médical, December 7, 1913).

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Researches Concerning the Hypophysis.—Study of the ontogenesis of the hypophysis demonstrates the necessity of revising the nomenclature applied to it. The following classification of the several parts of the organ is advanced by the author: 1. The pars neuralis, consisting of (a) the eminentia saccularis of the tuber cinereum; (b) the infundibulum; (c) the infundibular process. 2. The pars glandularis (epithelial), consisting of (a) the pars tuberalis (hitherto undescribed); (b) the pars infundibularis; (c) the pars distalis. Frederick Tilney (Journal of the American Medical Association, January 3, 1914).

Department on General Medicine

Original Article

ORTHOTHERAPY: NORMALITY OF POSTURE AS A FACTOR IN HEALTH.*

By J. MADISON TAYLOR, A.B., M.D.,

Associate Professor of Non-pharmaceutic Therapeutics, Medical Department of Temple University,

PHILADELPHIA, PA.

POSTULATE.—The maintenance of typical or "orthograde" attitudes, and also the correction of abnormalities in posture, exert important effects on the human organism in and out of health. A study of the factors involved affords a solution to many problems of vital conservation and clinical medicine.

Homo sapiens, chief of the primates, might well assume for his motto, *"Per ardua ad astra."* In the process of attaining the erect attitude and reaching his present conformation he has passed through many phases of structural evolution.

Today there are—and at all times there have been—many urgent problems of morphologic adaptation and compensation. Men of the Neanderthal type constituted, in all probability, only one among many groups of highly specialized primates.

The *Pithecanthropus erectus* (a by no means impossible figure) serves as a prototype of emergence from the rabble of partly erect creatures to the fully upright man of recorded history.

The opposable thumb, with its limitless potentialities, lifted the group distinguished by increasing erectness far onward toward the commanding position of the efficient, versatile human being of today.

No great advance is ever made except by meeting and overcoming correspondingly great difficulties, perils, and limitations. Attainment of the fully erect attitude has come about through the elimination of many physical faults, weaknesses, and functional imperfections, from which, however, we, the descendants, have by no means yet been wholly emancipated.

It is the purpose of this communication to glance at the evidence as to: (1) The disadvantages still obtaining in the radical change from the primal "all-four," or quadrupedal, to the erect attitude; (2) to what extent it is advantageous to utilize primitive attitudes in conserving functional efficiency, and (3) how to determine the best means of conserving our uniquely special-

* Read at the Fourteenth Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5 and 6, 1913.

ized conformation, our acquired or artificial postures, while pursuing the economies of vegetative life in achieving efficiency, force, and grace in the arts, industries, plays, and other steps in environmental selection.

Man is the one animal maintaining habitually the upright attitude. This "orthograde" posture being contrary to type, some of his parts are subjected to strains, more or less constant, in the process of adjustment to such a reversal of original conformation. Many modifications of structure and interrelationship have come about in achieving compensation and adaptation to a posture different from that of his ancestors.

Man being the only animal capable of employing to advantage radical modifications of primitive postures, the need arises constantly of assuming wide diversities of attitude for varying periods of time. Civilization, with its complex conditions, makes many demands, real or fancied, which compel wide departures from primal postures in seeking relief from strain, fatigue, or in meeting artificial exigencies. Industries compel the adoption of various attitudes, some of which are consonant with primitive postures, and hence afford temporary return to type. When variants from typical attitudes are maintained too long, there follows greater or less impairment or damage in function, structure, or both.

It may be assumed that these acquired postures, or adaptations to exigencies, should be modified in several directions. Among these modifications and their uses are:—

1. In maintaining balance, poise, and tissue-tone.

2. In developing various parts, and training them to their fullest efficiency.

3. By returning from time to time to primal attitudes,—all-four movements, ventrodecubitus, and the like,—some measure of tone is regained in structures vitiated by excessive or unnatural strains; compressions, passive or active.

The more nearly a human being adheres to the primal or typical or "orthograde" postures, the better does the organism sustain functional integrity, and the more economically are its mechanical activities performed. Posture variations are often permissible, however, and of value in many directions in achieving temporarily functional and industrial efficiency, as well as force and grace of movement. The more promptly an individual returns to the orthograde posture after a departure from it, the more are the factors of vital rhythm, ebb and flow of fluids, respiration, and oxygenation encouraged and economized.

II.

The normal or orthograde posture, as defined by Scanes-Spicer,[1] is "that in which the center of gravity is directly over the center of the base of support. A vertical plumb-line joining these two points bisects the median transverse occipitocondyloid axis, also the intercotyloid axis, passing

[1] R. H. Scanes-Spicer, British Medical Journal, December 19, 1910; also, Medical Press and Circular, February 9, 1910.

through the center of gravity made up of the trunk and upper limbs. Man stands on one end of his longitudinal axis, with his center of gravity poised high over a small base of support.

"These two points are distanced as much as possible from each other by the fullest possible extension of the vertical axis in which the above points lie. In any movement of the body, or part of the body, there is a relative displacement of the center of gravity, which necessitates an increment of work to maintain the erect or orthograde posture."

Thereupon results a straight back, a raised and expanded thorax, well distanced from the pelvis, and a flat abdomen. This posture is the one for maximum respiratory efficiency.

While the key to the normal upright posture is (ontogenetically and morphologically) the position of the pelvis, practically and kinesthetically it lies in the action of the thorax.

In brief, the ideal standing position depends on the thoracic structures. How this can be reacquired when perverted, and why it should be, will be presented in detail later. Suffice it to state here that the ideal human standing position—the graceful, efficient body-poise—depends on the thoracic uplift, and that this involves a balanced, unconscious tension in the whole skeletal entity, a normal tonus in all supporting structures, bony, muscular, tendinous, and ligamentous,— a passive tension of the abdominal walls, maintaining the correlationships of the viscera, and hence also of circulatory and hydrostatic equilibrium.

III.

In the interests of best functionation, the head should be held high-poised. This is not compromised by moderate changes in its attitude, provided the base be not unduly altered, except for brief periods. Any continuous sagging of the thorax is followed by less or more compression of the contained and correlated viscera, and impairment of the vital processes is induced.

Next in importance is tonus or passive tension in the erector spinæ muscles. Should these relax, the diaphragm is lowered and its rhythmic pumping action lessened: regular suction is not maintained; tidal air is decreased; the portal venous system suffers as well as the systemic veins and lymphatics, and all hydrostatic actions are impeded.

Nutritive balance, neuronic poise, cerebral efficiency, all depend on these postural factors. Failure to keep the diaphragmatic suction-pump at work is followed immediately by less or more waterlogging of tissues, a dimming of the visceral "lamps of life," which should be kept always brightly burning. No conscious effort is needed when once normal respiratory habits are acquired. Inasmuch as every individual tends to carelessness, to omit vigilance, and hence to fall into disability, it is necessary that exogenous stimuli be applied from time to time, or the organism suffers.

The propulsive (centrifugal) action of the diaphragm is not optional, but compulsory. The integrity of the pump-like heart action is not more

essential to life than the bellows-action of the diaphragm, which is the main agent in emptying the portal venous system, the systemic veins, and the lymphatics, as well as necessary for the indrawing of tidal air. The vertebro-thoracic structures, the diaphragm, and the powerful muscles of the spine constitute the primary mechanism of oxygenation. At the same time, these mechanical agents, acting with the abdominal muscles, exert a constant elastic pull which maintains the viscera and hydrostatic mechanisms in their normal interrelationships and aids in their action, included in which is the promotion of the ebb and flow of fluids. The downward movement of the diaphragm (centripetal action) must be followed promptly by an uppull, or all the tides of the body rest. Any prolongation of the rest-period invites stagnation and waterlogging of tissues. Hence it is plain that thoracic competence and full action of the thorax and diaphragm are essential to the maintenance of vital processes.

IV.

The body is frequently compared to a machine of exceptional delicacy and efficiency. Far beyond the resources of a machine the body possesses powers for growth, development, repair, and adjustment; it is also capable of modifications in response to environment, favorable or unfavorable. The possessor is tempted to rely upon these resources and omit the exercise of that care and watchfulness which would be promptly bestowed upon an engine or a domestic animal. In consequence of this deplorable indifference to our largest asset, the body is perpetually falling into derangement and disrepair, physicians being occupied mainly in effecting repairs, and but rarely encouraged to act as conservators of health.

The first and most obvious principle in conserving the efficiency of a machine is to make sure that all parts are so adjusted as to secure nicest, most exact and economic action; next, so to direct moving forces that all parts shall be and remain in best adjustment. Then follow manifold and diverse factors concerned in achieving the best possible development of inherent capabilities.

The normal body is a marvel of compactness and economic adjustments. Structural symmetry contributes much to maintenance of efficiency, and even to the prolongation of life. As a man or woman grows old, increasing defects of bodily carriage and poise become evident and are deplorable from both esthetic and hygienic standpoints. Deformities caused by posture and costume likewise impair health in many directions. Postural peculiarities, present in every individual to varying degrees, are too often regarded as mere matters of course, as distinguishing characteristics, and dismissed as of no moment. A conspicuous stoop, a lateral twist, a sagging waist, high shoulders or hollow chest, bent knees, and like assymmetries are looked upon as merely evidences of bad taste, or as the fingermarks of fate. They are often deliberately perpetuated, even exaggerated in portraits, and too frequently imitated. A grave significance is added when it is realized that these departures from normal attitudes are in truth exaggerations of developmental faults. They induce degenerative changes in nerve-centers

or conduction-paths, morbid slackness in tissues, impaired nutrition in important structures, compressions of blood-vessels and nerves, all tending to produce vitiations in vital structures.

It is generally assumed—erroneously—that such degenerative alterations merely foreshadow advancing age and are inevitable. Changes in shape and symmetry not seldom begin in early childhood and are often obvious in adolescents, or young adults, inducing in them deformities similar in kind, but less in degree, than in older folk. Nevertheless, among some fortunate persons of great age they are practically absent. These exceptional individuals are usually possessed of extraordinary vigor or stamina.

V.

The foregoing statements tend to demonstrate that this apparently insignificant matter of correct posture warrants scientific attention. It may be urged that certain individuals of advancing years, or even great age, are met, with well-marked attitude deformities, who yet enjoy excellent physical and mental health. Young folk are also occasionally met, of awkward shape and slouching carriage, who excel in some active field sports, exhibiting excellent and varied physical capabilities. These also are rare. Attitude peculiarities, again, are oftentimes merely affectations varying with fashions, and are to be explained by the tendency to follow absurd and unnatural standards.

Admitting that a goodly array of instances can be cited of young or old persons defective in features ordinarily regarded as marks of efficiency, yet capable of using their co-ordinate powers exceptionally well, these individuals would nonetheless be the better for correction of their defects. If these persons had possessed full, accurate command of their motor machinery and had been specifically trained to act in accordance with the best postural and motor standards, they would have become vastly better animals. Let us use as a familiar instance the race-horse, to show why special care and training are required to produce the best results. A thoroughbred colt, the product of generations of selective care in breeding and training to run or trot to the utmost of speed and style, yet requires months and years of laborious special exercises to reach his individual maximum.

VI.

To show why faulty postures actually do cause hurtful conditions it is necessary to recall that *the machinery of organic life is dependent for fullest efficiency upon normal relationships of component parts one to another.* Familiarity with the merest outlines of physiology will make it plain that one set of tissues should bear ontogenetic and exact relationships to others. It is difficult to realize how the human organism can continue to live and enjoy even moderate vigor if its divinely ordered mechanisms are thrown markedly out of adjustment, mechanically or chemically; even more is this true if they be structurally changed by compression. While the power of human endurance and recuperation is incalculable, nonetheless a little thing may go

wrong, or a totally unforeseen exigency arise, and the breath of life departs in an instant: All the more reason why every effort should be made to give nature full opportunity to work on unhindered lines, and reach relative morphologic perfection.

VII.

Let me cite illustrative instances to show the hurtfulness of faulty posture. The attitude of children in schools is now receiving a late, but well-merited attention. Relative positions of the chair and desk, if correct, save the organs of sense, *e.g.,* the eye. If they be faulty, the eye is caused to suffer derangements or dangers, many of them irreparable. The destructive effects are due not so much to mere nearness, remoteness, or special angle of the object seen, the character of the text, and position of the light; organic integrity is influenced even more by the cramped position of the little bodies, inducing *interferences with vascular and sympathetic nerve-structures which sustain the blood-supply to the eye as well as by long-maintained, irregular pressure on the major blood-vessels and nerves,* thus altering the special nutrition of delicate organs and interfering not only with local function, but with full development.

It should be recognized that prolonged sitting at a desk, even in the most correct postures, produces much damage in the growing structures of the thorax, in the bones and ligaments, and in the back and limbs. Following upon this occurs a series of changes in the circulatory organs, by which the brain and governing centers are injured more or less. The fact is well established that children subjected too early to school restraints and compelled to do work in advance of their years, fail to acquire so complete a mental development as those who begin their studies later, when better equipped structurally by specialization through spontaneous activities and unhindered compensation and adaptation.

Take a casual view of a group of school children who have not been taught or encouraged by good systems of free exercises, and it will be patent that already they have begun to acquire posture deformities. This is more obvious in girls than boys, because boys follow moral impulses to free activities and self-developmental measures, such as robust games.

Observe a group of adolescents,—youths at college, or girls on the verge of womanhood. The critical although unskilled eye will note many faults of poise, of gait, and incorrect positions of the head, back, or limbs. The trained eye can point out (especially if the concealing clothes are removed) many serious defects hitherto unnoted. Some of these may be modified later by improved methods of life. Lateral spinal curves often disappear under favorable conditions. Far oftener, however, they become permanent. The moderately distorting effects begun by school confinement become obvious when later emphasized by laborious occupations.

VIII.

Let us review the desirable features: A straight back is a good index of physical efficiency. By this is meant a backbone with no lateral, and

little more anteroposterior curving than is normal for a child of 10 years. This observation is palpable enough and will be appreciated in certain of its applications, notably the military attitude taught (well or ill) since earliest recorded times. Other things being equal, the straight, well-set-up back is to be found chiefly in those subjected to careful training in wholesome, symmetrical activities. In proportion as individuals habitually maintain or return to correct attitudes do they retain vigor, elasticity, correct poise, and motor efficiency.

Next to straightness of the back, it is desirable to preserve elasticity and tone in trunk, muscles, and ligaments. Next in importance is the (nearly) horizontal position of the pelvis (30 degrees—Goldthwait); and next, the proper carriage of the neck and superimposed head. The whole constitutes the normal, well-poised attitude essential to health, vigor, and full activity.

The effects produced, and maintained, by a (nearly) straight back are as follows: If the backbone is nearly vertical the ribs must become more or less horizontal; hence they open up, fan-like, and the thorax thus becomes more capacious. This can be demonstrated by anyone standing with the back to a wall and striving to obliterate the lumbar and nuchal curves, *i.e.*, to flatten the hollows in the back and neck.

IX.

Normality of posture is essential to organic competence. Erectness is a composite of vertical and horizontal lines from which divers other lines depend. While curving lines contribute to grace, they tend to impair powers of support. The weaker the person, the greater the curves exhibited. Weakness is conditional upon exaggeration of dependent lines which gives evidence of incompetence in supporting structures. These supporting structures may be at fault, both at origin and periphery. A tendon may become weak, or the muscle, or both, lose tone and relax. When a group of muscles grows weak at origin or insertion, deformities occur. If these weakened structures support organs, then will they cease to maintain normal interrelationships to other structures. The visceroptosia arise in central defects which can and should be radically corrected by enhancing the vital index through attention to all inherent fountains of force. A secondary cause is loss of integrity in those agencies exercising support supplied by external and collateral structures. Where these are voluntary muscles their vigor must be enhanced by all means, among the most definite of which is suitable use by exercise.

The key to the erect or orthograde posture, and hence to skeletal efficiency, to proper visceral interrelationships, and, thus, to an important factor in health, lies in the maintenance of a normal attitude of the thorax. This assumes the maintenance of a (relatively) straight backbone and horizontality of the ribs. When the ribs remain relatively horizontal and are easily held well up to their normal levels, there is afforded adequate support to the diaphragm, to the external and internal abdominal muscles, and to all those

structures that combine to provide visceral support. There is thus effected a surprising degree of improvement in organic competence.

X.

Relief of disabilities through readjustment of skeletal structures is of recognized efficacy, though not adequately appreciated. Treatment by orthotherapy should begin by graded measures for achieving elasticity of the muscles, ligaments, and other supporting structures. These tend to lose mobility from divers causes, inducing first structure changes, and later posture deformities. Loss of tissue-elasticity bears directly upon respiratory, circulatory, and nutritive competence; also indirectly upon all grosser and some finer functions. Organic adjustments are as necessary to competency as freedom from undue or prolonged pressure to the hollow and tubular structures.

By restitution of thoracic competence alone so much is added to well-being as to justify confidence in respiratory education.[2] This consists of graded exercises, designed to reinstate lost or impaired function in structures directly concerned in the primary acts of oxygen intake and appropriation.

In the domain of cardiopathies, especially where organic lesions are so far advanced as to become disabling, my experience has convinced me of the value of this measure. Likewise in respiropathies, except where structural disintegration has advanced too far, is the field of applicability large, in addition to whatever else science and experience have demonstrated to be of use.

XI.

Every infective process leaves a stain on cellular integrity, producing functional limitations of one sort or another which rarely, perhaps never, wholly disappear. On every occasion when an individual is damaged by disease, whether through toxic agencies arising from without or within; from errors of conduct, physical or mental; from accidents, traumata, there follows a lowering of the vital index, marked or slight, which may or may not spontaneously disappear. Among the higher duties of the medical man is not merely that of helping the patient through acute exigencies, nor even of restoring the organism to former planes of efficiency; he must supply something more, viz., he should utilize every occasion afforded to teach improved methods of conduct, so that hitherto unused resources shall be made available. The individual can and should be raised to a higher level of efficiency.

[2] As a graphic demonstration of the efficacy of this one orthotherapeutic principle, we may cite the practice of the Hindu Yogis. It is well known that this large group of people attain a highly desirable degree of vigor and resistance to disease by pursuing this one measure alone. The constant practice of the "complete breath" does, in and by itself, bring about marvels of reconstruction not only in the domain of physical, but also in that of mental, processes. The results claimed may appear excessive, even fanciful, to those unaware of the facts, yet the evidence is concrete and convincing.

Mobilization of joints and muscles, liberation of adhesions and contractures, relaxation of overtension, removal of abnormal compressions on tubular structures,—all these are of fundamental importance, making for nutritive enhancement and limiting the formation of cadaveric, putrefactive, and other toxics. Not only this, but mobilization of the paravertebral structures (where they have become rigid) exerts a valuable effect on vasomotor competence, by permitting freer circulation in the spinal outlets.

There is no doubt in my mind that training the elasticity of the backbone does render signal service to circulatory activity. The effect is to enhance vasomotor efficiency. Indeed, we have here a branch of treatment, *kinesitherapy*, worthy of thorough clinical research. Rigidity is by no means only a phenomenon of aging structures, though it is most conspicuous in senility. Among young children it is frequently exhibited, and too often overlooked. In the whole group of contractures following spinal cord disease, cerebral palsies, and descending atrophies, there is plain evidence of rigidity, contractures, and spasticity. This feature is too frequently obscure, and is only to be revealed by careful observation and testing.

XII.

In his daily work the clinician meets constant evidence of impairment in the tonicity of muscles and of elastic and supporting structures. This is a highly significant condition and should never be neglected. Often enough it induces a secondary atony, or flaccidity, resulting in phases of invalidism manifested by mental asthenia and physical depression, especially in the circulatory, digestive and eliminatory domains, which must be reckoned with. Otherwise, it is impossible to secure full repair.

Here orthotherapy, achieving skeletal, and hence also organic, readjustments, accomplishes much more than any other remedial agency. Even as an auxiliary treatment it is unsurpassed.

Perhaps the most graphic, urgent and often puzzling disabilities due to loss of mobility have to do with sensory distresses which are then caused. It is not enough to locate the seat of pain, to determine the structures at fault, or to work out a pathologic explanation of the sensory phenomena manifested. Drugs employed to mitigate pain cannot reach the source of trouble. To achieve radical cure involves forming a broader conception of the type and degree of functional disrepair, and evaluating the kind and quality of damage in collateral or correlated organs or structures, all of which demand physiologic encouragement or compensation.

XIII.

Biologically, man's upright attitude places many of his parts at an anatomic disadvantage. Especially is this true of the abdominal organs, hollow or tubular structures containing varying amounts of burdensome fluids. These drag downward upon the relatively feeble supports. Hence it is important that they should be emptied promptly and completely, if integrity,

both functional and structural, is to be insured. Loss of functional integrity may not be followed at once by noticeable disorders, but it constitutes chronic disability which bears heavily upon the patient's well-being. When this stasis in the splanchnic circulation is protracted, there follows a complex group of effects impairing the integrity of the self-regulative and protective forces, inviting damage, expediting the devastations of infectious agents, and also lowering mental and moral balance.

So long as the supporting structures maintain their tone, all goes well. If tonicity is lost, engorgement occurs, especially in the lower quadrants, and waste materials are retained which should move out freely. All this leads to supersaturation with toxic waste-products, till the resulting condition resembles that of a bit of wood long immersed in dirty water. When tissue-tone is impaired in the relatively feeble supporting structures, the back sags and bends to compensate for the heavy down-drag, the ribs and chest fall in, the abdominal muscles are weakened and overstrained, and the hollow organs are compressed. Not only do all the viscera, solid or hollow, lose their nicety of adjustment (so essential for functional alertness), but a general hypoplasia follows.

Neglect of these acquired defects leads to disorders throughout the domains of nutrition, neuronic action, etc., the result being damaged organs, among which, notably, are those of the respiratory, genitourinary, and reproductive systems. Whenever an infective process occurs, even of mild degree, an excess of exudation takes place, followed by restricting bands of organized lymph, adhesions, and fibrosities. Splanchnic engorgement leads to vascular degeneration at the fountain-source of vital activity. Indeed, this "water-logging" of the lower abdominal organs constitutes the key to an enormous number of morbid states, and is too often not appreciated.

Relief measures are simple enough, and when regularly applied not seldom suffice to remove a number of disabilities previously puzzling and obstinate.

XIV.

Let me give a few brief hints concerning the manner in which the process of securing correct posture should be begun:—

By the simple device of clasping the hands behind, pulling apart strongly and pushing the arms forcefully down, at the same time thrusting up the chin vertically, the contractured tissues—those of the chest in particular—are forcibly stretched; perhaps for the first time in years. This act, repeated with steady increments of force, widens the front and base of the thorax, educates the downpull of the erector spinæ muscles, and overcomes the common and damaging habit of stooping. Stooping always causes undue compression of the viscera.

By this procedure I have frequently been able to rid patients of limitations caused by adherent pleuræ; to improve the power and sonorousness of the voice; to restore, in a measure, chronically impaired hearing; to relieve many of the evil effects of chronic heart disease, and to mitigate asthmatic or other morbid states. The increased respiratory capacity induced

also makes for esthetic as well as essentially physical betterment. By adding to the procedure forced expiratory action, the lower ribs are made to contract powerfully, and the abdominal contents are raised toward the diaphragm, whereupon a varied train of advantageous effects ensues. In short, by a close study of the minor contractures and their economic correction, it is practicable to procure, at any age, that symmetry and elasticity of the body which constitutes the index of a high working capacity.

(A second paper will set forth illustrations of the practical value of right attitudes in aiding functional competence; also recommendations how correct posture may be achieved.)

Authors' Abstracts

RECOVERY IN A CASE OF INFLUENZAL MENINGITIS COMPLICATED BY PNEUMONIA.*

By THOMAS E. SATTERTHWAITE, M.D.,

NEW YORK, N. Y.

The nervous phenomena which are occasionally features of the acute stage of influenza include neuralgias, functional disorders of the special senses, meningitis, cerebral or cerebrospinal, and psychic phenomena such as hallucinations, delusions, or even mania.

Most of the cases have been in children, whose delicate nervous system appears to render them especially sensitive to the toxins of the disease. The characteristic gross lesions consist of a series of minute hemorrhages scattered throughout the system. If an extravasation becomes infected by any of the pus-producing organisms, the prognosis is most unfavorable.

The influenza bacillus, though it may not always be found *intra vitam* in the blood or secretions or even by lumbar puncture, will usually be recovered at post-mortem examination by diligent search, though it may be associated with other micro-organisms, such as the pneumococcus or streptococcus, or may be replaced by them.

The poison may invade the meninges by extension, as from an otitis media or from abscess of a sinus; by metastasis, or by general infection of the blood by toxins.

Influenzal meningitis is usually ushered in by violent headache, especially frontal and nuchal; facial neuralgia, and photophobia. There are apt to be also irregular contraction of the pupils, muscular spasms, delusions, unconsciousness, etc. At first there is a high pulse rate, perhaps with arrhythmia. In the early stages the patellar or ankle reflexes are often exaggerated.

* Abstract of paper read at the Fourteenth Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5 and 6, 1913.

Later, if there is effusion into the ventricles or at the base, there is loss of these reflexes, relaxation of the pupils, stupor, and slow pulse. There appears to be a moderate leucocytosis at this stage. In from 6 to 10 per cent. there is said to be albuminuria. There appears to be seldom any diminution in the number of red cells, or in the amount of hemoglobin, both of which may be increased.

The author collected a series of 44 cases of all ages, with a mortality of 20 per cent.; in a second series of 30 cases, all adults, there was a mortality of 29 per cent. The prognosis is very different when to influenzal meningitis pneumonia is added. Usually the pneumonia is of the bronchial form. In the case reported by the author there seemed to be a mingling of the lobar and lobular forms. It started apparently as an extension of a bronchitis, and in the right lower lobe when first detected there was apparently a central lobular pneumonia. In the left upper lobe the deposit occupied most if not all of the lobe, and presented the usual physical signs of the lobar form. The temperature curve was also that of lobar pneumonia. Defervescence occurred on the seventh day. Of 6 cases of influenzal meningitis with pneumonia collected from the literature, 5 died, while in the sixth there was an incomplete cure, the patient suffering for two years from aphemia and showing mental deterioration. The author's case is the only recorded instance of a full recovery in influenzal meningitis with pneumonia.

Lumbar puncture was not practised in this case. Bromides in massive doses, with cold applications to the head, gave relief from the nervous symptoms. The blood-pressure never exceeded 110, and was at first below that figure. Milk, with Vichy water, plain water, or albumin water, and yolk of egg were practically all the nourishment used during the acute stage. Vitality was maintained with strychnine and hypodermic injections of camphor. The usefulness of hexamethylenamine was not evident. Temperature was lowered by the cool bath, when it exceeded 103° F. The room was maintained at 65° to 68°, with an abundance of fresh air. In general, the treatment was symptomatic.

DISCUSSION.

Dr. F. E. Stewart, Philadelphia, said that in looking over the literature of pneumonia it had occurred to him that the word "diseases" could easily be omitted and the cases classified as infections. Dr. Satterthwaite's case appeared to be an instance of infection in which the lungs and meninges were particularly affected. Some authorities recommended the use of camphorated water instead of the oil. He would like to see more study along this line. Camphor was absorbed more quickly in aqueous solution, but less of it was taken up by the body.

Dr. H. B. Anderson, Toronto, reported 2 cases of meningitis due to influenzal infection: (1) Student; had suffered for some years with ear trouble, but of late it had been quiescent. He was suddenly taken down with grip, soon developed violent headache, restlessness, and delirium, and died after a few days. The site of infection was probably the ear. (2) Woman, 45; taken down with influenza of the ordinary type. While she was improving, there suddenly developed marked symptoms indicative of meningitis,—headache, delirium, and unconsciousness. The patient died after a few days. Lumbar puncture had failed to disclose the organism, or give any definite infor-

mation. The case was apparently one of meningitis complicating influenza, the infection having probably entered through the ear. The patient had previously suffered from transient ear pain and examination had disclosed evidences of a mild inflammation of the drum.

Dr. Satterthwaite, in closing, said he believed that the case was one of grip infection, the pulmonary and meningeal infection being secondary. There was no need of lumbar puncture, as the diagnosis was clear. His experience with camphor in cases of this kind had been very satisfactory. One of his patients had obtained so much relief from it that it was repeatedly asked for, and given continuously for weeks.

PULMONARY SYPHILIS, WITH REPORT OF A CASE PROMPTLY RESPONDING TO SPECIFIC TREATMENT.*

By ALBERT E. ROUSSEL, M.D.,

Associate Professor of Practice and Clinical Medicine in the Medico-Chirurgical College; Visiting Physician to the Medico-Chirurgical and Howard Hospitals; Officier d'Académie, France, etc.,

PHILADELPHIA, PA.

Pulmonary syphilis, excepting the congenital form in children, is a rare disease. Bronchial catarrh may occur as a manifestation of the secondary stage of syphilis and be alleviated or cured by specific treatment. In the late secondary or tertiary stage gummatous infiltration of the submucous tissue of the trachea and bronchi is not infrequent, with resulting stenosis of the parts. Pulmonary lesions of acquired syphilis belong chiefly to the tertiary stage. Gummata may occur singly or in numbers, vary in size from a hemp seed to a goose egg, and are most commonly found in the interior of the lung and in the lower lobes, thus differing from tuberculosis. Syphilitic bronchopneumonia is undoubtedly a possibility. As to fibroid induration, the following are the changes of this nature that have been attributed to syphilis: (1) Thickening extending from the hilus around the bronchi and vessels; (2) isolated masses of fibroid tissue in various parts of the lung; (3) diffuse changes occupying the whole or the greater part of the lung. Fowler has reported 5 cases of the so-called "syphilitic phthisis."

The case reported by the author was that of a colored female aged 24 who had a distinct history of syphilitic infection, with five miscarriages. The symptoms had been chills, fever, sweats, cough, expectoration, and marked loss in weight. Three weeks before admission to a hospital she was hit on the head, in the right parietal region, with a brick. The wound had been treated, and looked healthy on admission, but since that time the lung symptoms had become more marked; there were severe chills, followed by fever and drenching sweats. The temperature *for weeks* reached 106° and over, and on occasions in the course of several hours would sink to 96⅕°.

* Abstract of paper read at the Fourteenth Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5 and 6, 1913.

The expectoration was not abundant, but mucopurulent, offensive, and on one occasion slightly tinged with blood.

Percussion showed scattered areas of dullness over both sides, particularly at the right base. The apices were hyperresonant throughout the case, free from râles, and the seat of supplementary or puerile breathing. Over the dull areas the breathing was bronchovesicular and bronchial in character, vocal resonance increased, and numerous groups of subcrepitant and occasional crepitant râles heard. These signs continued until the ultimate decline in temperature took place, and at a late examination nothing abnormal could be detected in the chest. The von Pirquet test was applied twice, with negative results. The sputum, examined about a dozen times, was invariably free from tubercle bacilli, pneumococci, streptococci, and elastic fibers.

The condition during the greater part of the first six weeks seemed critical, and death was expected at any moment. The patient on admission had strenuously denied the possibility of venereal disease, and also concealed her numerous miscarriages. Later there developed what proved to be a gumma on the fourth rib of the right side, and at the same time a synovitis of the extensor tendons of the wrist. She was at once placed on inunctions of 2 drams of mercurial ointment and 60 to 80 grains of potassium iodide daily. The results were striking; the fever, symptoms, and physical signs commenced immediately, rapidly and continuously to improve, and she was later discharged cured.

DISCUSSION.

Dr. Thomas E. Satterthwaite, New York, said that at various times he had tried to bring up a discussion of this subject. At first he could hardly get anyone to believe that there was such a disease as syphilis of the lungs. The cases were thought to be instances of pulmonary tuberculosis. The pathologic findings, however, were very instructive,—particularly the white radiations running out from the gumma. The difficulty lay chiefly in the differential diagnosis. Once a diagnosis had been made, the gummata in the lungs and all the symptoms rapidly disappeared under appropriate treatment,—and this was an important diagnostic point. A positive blood reaction was a great help. The discovery of the germ would demonstrate that cases of pulmonary syphilis are more frequent than is generally supposed.

Dr. Pottenger spoke of the difficulty of making a correct diagnosis. The absence of tubercle bacilli from the sputum was not conclusive evidence. Some tuberculous patients but rarely presented bacilli in the sputum. In the case of one patient who had been in 2 sanatoriums for fifteen months the bacilli were detected in the sputum only twice. Their presence could easily be overlooked in such a case unless examinations were made frequently and very carefully. If one were persistent, however, he would be sure to find them sooner or later in many cases which had been considered as negative. The localization of the lesions was not significant. The negative tuberculin test meant nothing. In some cases where he suspected syphilis he found it necessary to use antisyphilitic treatment in combination with antituberculous treatment.

Dr. Osborne spoke of the value of the iodides from a diagnostic standpoint. They were ordinarily contraindicated in pulmonary tuberculosis. If, however, there were no tubercle bacilli in the sputum they could be given, and if afterward no bacilli were found the diagnosis was clear. He had found that, after giving them, the number of tubercle bacilli thrown out in the sputum was increased much as was the case after the administration of tuberculin.

Dr. Evans said that there were affections other than pulmonary tuberculosis that should be taken into consideration in making a diagnosis of syphilis of the lung. In illustration he related a case of a woman aged 35 who had been coughing for a year. There was a growth in the left chest pressing upon the heart, X-ray examination showing a mass that took up the mediastinum and extended over on the right side, compressing the lung. No tubercle bacilli in the sputum. One enlarged gland in the right supraclavicular region; glands in both axillæ. Liver enlarged. History of 4 to 5 miscarriages. Husband denied lues. In spite of negative Wassermann, the clinical picture suggesting syphilis, the patient was treated accordingly, without success. Examination of the supraclavicular gland which was removed showed that the growth was a lymphosarcoma.

Dr. Morris said that there was still another affection that should not be overlooked in making the differential diagnosis. In illustration he related a case that was first diagnosed as tuberculosis of the lungs, then pulmonary syphilis, and which finally turned out to be a case of blastomycosis.

Dr. Satterthwaite said that in the early stages it was almost impossible to differentiate between pulmonary tuberculosis and pulmonary syphilis.

Dr. Pottenger had not found potassium iodide harmful in tuberculosis. He had used it in a great many cases and often found it beneficial. His employment of it had been more particularly in advanced cases.

Dr. Osborne said that in incipient cases, according to his experience, the iodide was liable to stir up the pulmonary condition and make matters worse. He recollected in particular one such case in which the use of potassium iodide was followed by a lighting up of the symptoms and a change for the worse. In chronic cases the effect was somewhat similar, but it enabled the patient to expel the bacilli.

Dr. Roussel, in closing, said he was aware that the absence of tubercle bacilli did not exclude pulmonary tuberculosis; in fact, he had taught for years that if the diagnosis was postponed until the presence of tubercle bacilli in the sputum could be demonstrated, a large percentage of the patient's chances for recovery had been lost, but in a case presenting the marked and advanced physical signs which had been noted in his patient and with many repeated examinations of the sputum, which had been invariably negative regarding tubercle bacilli, particularly at the time she was taking large doses of potassium iodide, the conclusion must be absolutely against tuberculosis. This was confirmed by the very rapid recovery which had occurred since, and was being maintained. He had no doubt that the woman had syphilis of the lungs, and this was also the opinion of his colleagues. Moreover, there was no question that she had presented all the symptoms and physical signs of bronchial pneumonia, lasting over a period of four months. At present the woman's chest was normal. He did not believe that such a result could have been obtained within this period of time in any disease other than syphilis.

DIOXYDIAMIDOARSENOBENZENE-MONOMETHANE SODIUM SULPHONATE IN SYPHILIS OF THE NERVOUS SYSTEM.*

By EDWARD D. FISHER, M.D.,

Professor of Mental and Nervous Diseases in the University and Bellevue Hospital Medical College,

NEW YORK, N. Y.

We have in this comparatively new remedy one of the most important aids to the treatment of syphilis of the nervous system, both in the early

* Abstract of paper read at the Fourteenth Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5 and 6, 1913.

manifestation, *i.e.*, cerebrospinal syphilis, and in the so-called parasyphilitic affections, tabes and general paresis. With the control examinations of the blood and cerebrospinal fluid, we have in the use of this drug a rational method of therapy, the necessity of continuance of treatment, or its cessation, being indicated by the presence or absence of the Wassermann reaction.

With the discovery of the spirochetes in the brain and spinal fluid in tabes and general paralysis, the indication for the removal of this active agent of syphilis becomes mandatory. We should bear in mind, however, that after definite pathologic changes have taken place nothing can be accomplished beyond preventing further extension of the disease by the still active agent. Too much emphasis cannot be placed, therefore, on the importance of early diagnosis by careful serologic and clinical examination.

We have in the remedy under consideration one which, if employed at the proper time, can effect much in staying further progress of syphilitic disease of the nervous system, if not, indeed, in certain forms, produce a cure.

DISCUSSION.

Dr. J. J. Kinyoun said that during the last two and a half years he had examined a number of tuberculous patients for syphilis, and had found a strongly positive Wassermann reaction in about 30 per cent. of cases. He was still pursuing the investigation at a reformatory institution for boys. So far he had found a positive reaction in 23 per cent. of the boys examined,—boys between 12 and 18 years of age.

Dr. Fisher, in closing, said that the effect of the new remedy in neuritis had been rather favorable than otherwise. The Wassermann test was of great value in doubtful cases, such as those of hereditary syphilis, and where there was uncertainty as to the nature of a mental disease, *e.g.*, in some cases of general paresis. The use of a new remedy such as this, so easy of administration, was likely to be carried to extremes. It sometimes fell into wrong hands, and hopes of cure were engendered that were not to be fulfilled; on this account he thought it well to sound a note of warning as to the small proportion of cases in which a cure could be expected after a certain point had been reached.

PROLONGED-PRECIPITATE PARTURITION DUE TO DISENGAGEMENT OF THE DISPROPORTIONATE HEAD.*

By A. ERNEST GALLANT, M.D.,

NEW YORK, N. Y.

The combination of a normal pelvic inlet with a relatively small fetal head which, failing to flex properly, fails to engage and stay in the grip of the inlet; fails to make any advance; fails to glide down the pelvic planes, and thus causes delay for many hours or days, was met with in about 65 per cent. of the author's consultation cases. The maneuvers to which one may resort in order to facilitate flexion and engagement of the head within the

* Abstract of paper read at the Fourteenth Annual Meeting of the American Therapeutic Society, held in Washington, D. C., May 5 and 6, 1913.

inlet and keep it there between the pains, that it may not recede and wabble above the brim, are: (1) External pressure on the buttocks at the fundus, exaggerating the flexion of the trunk on itself and the chin on the sternum; (2) external pressure on the occiput just above the symphysis, with the palm of the hand pressing the occiput down into the brim; (3) internal pressure on the forehead, with the fingers in the cervix, *tilting* the forehead *upward* during each pain; (4) introduction of a single blade of the forceps to the occiput and gentle traction during a pain to facilitate flexion and engagement,—best accomplished by a solid blade forceps, as the head will move more readily and the bulk of the forceps will help to fill up the relatively roomy inlet, the head engaging more firmly and advancing more surely; (5) guidance traction,—high forceps, with *loosely fitting blades, chiefly as guides* and to prevent recession, being careful not to drag too vigorously or suddenly lest a too-precipitate delivery occur and the mother suffer a torn perineum which could have been avoided; (6) judicious combination of two or more of these manipulations as the case may demand. Experience has strengthened the author's conviction that the chief danger to the child in the use of forceps lies in the *unrecognized and uncontrollable compression of the head,* caused by the pressure of the cervix, vagina, and pelvic walls on the blades. This has been largely overcome by a "safety lock," devised and described by him.

THE TREATMENT OF SPLANCHNOPTOSIS, WITH REPORT OF CASES.*

By ELMER B. FREEMAN, M.D.,

BALTIMORE, MD.

The essayist emphasized the point that congenital cases of splanchnoptosis should be recognized in early childhood. Exercises that would tend to increase the capacity of the abdomen and develop strong abdominal muscles might decrease the number of severe cases. Cases without adhesions, or with loose adhesions, could be relieved and made comfortable by proper medical treatment. Cases with firm adhesions which caused a definite kinking or constriction of any portion of the gastrointestinal tract, with symptoms of chronic obstruction, required surgical intervention. The medical treatment referred to had for its object the improvement of nutrition, an increase in the nervous and muscular tone, the correction of gastric disturbance, and the removal of constipation. Forced feeding, rest in bed, and the use of a suitable corset might be required. The author preferred the corset recommended by Doctor Gallant some years ago.

DISCUSSION.

Dr. A. Ernest Gallant, New York, said that he had been the first in this country to advocate scientifically constructed corsets in the mechanical treatment for visceral

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ptosis. He was glad that the medical profession had come to realize that but few cases call for operation. In most cases the organs could be adequately supported and the dragging downward counteracted. The corsets on the market today failed to furnish the right sort of support, being designed upon an erroneous principle. Under them all, at the bottom in front, was a space that allowed sagging of the abdominal contents. One of the chief objects of support was to do away with this. Dr. Gallant's way was to put the patient on her back, raise her hips, allow the organs to flow back, with the assistance of massage, and then to lace the corset snugly and properly so that when the patient arose there should be no opportunity for falling down of the abdominal contents. He believed that his corset met these requirements. It did not permit of any sagging, whether the patient were standing, sitting, or lying down. It put a shelf under the lower abdomen to hold the viscera up, thus doing away with the sensation of dragging that so many women experience. The cause of the sensation was the dragging of the unsupported organs upon the whole system of attachments along the spinal column, from the neck down. Proper support must and did hold up not only the abdominal viscera, but the thoracic viscera as well. If the epigastrium was hollow as compared with the protuberant hypogastrium there was sure to be displacement of one or several viscera. Each organ might not sag very much, but the downward pull of all together caused the discomfort and neurasthenic symptoms. The relief afforded by a properly adjusted corset was demonstrated by the change that came over these patients when they foolishly lay the corset aside for a time. Some of them had to go to bed while it was being repaired.

Cyclopedia of Current General Literature

Gonorrhea in the Female, Iodine Treatment of.—Following the suggestion of Bovée, the author has recently employed the iodine treatment for gonorrhea in the female, with excellent results. The presence of the gonococcus in the discharges having been ascertained, the external genitals, after separation of the labia, are swabbed with a 3.5 per cent. solution of iodine crystals in 9.5 per cent. alcohol. Next the orifices of Skene's glands are sought, and a few drops of the same solution forced in by means of an ordinary hypodermic syringe with a needle made blunt by filing. Next the external openings of the vulvovaginal glands are found and similar injections made. The patient is now placed in the Sims position, Sims's speculum introduced, the vagina swabbed dry with cotton, and the presenting cervix (not the canal) painted with the iodine solution by means of a cotton swab about the size of a hickorynut firmly fastened in the ordinary dressing forceps. The anterior wall is thoroughly painted, then both the right and left sides. Next the swab should be pressed firmly up into the posterior *cul-de-sac,* the speculum partly withdrawn, rotated so as to press against the anterior vaginal wall, and the posterior wall swabbed. A narrow strip of gauze should then be introduced as high up against the posterior wall as possible, the speculum removed, and the gauze allowed to protrude beyond the introitus. If a bivalve speculum is used, with the patient in the dorsal position, it becomes necessary to swab the vagina in smaller sections. The swab is then firmly pressed into the posterior *cul-de-sac,* the speculum withdrawn, the vaginal walls allowed

to collapse, the swab slowly removed with a rotary motion, and a small piece of gauze introduced as before. The patient is apt to complain of smarting for half an hour, but rarely longer. Some patients seem to experience no inconvenience whatsoever. Doses of 5 to 7½ grains of hexamethylenamine are given four times daily with plenty of water. The patient is ordered to rest as much as possible, and, where possible, kept in bed, with a light diet. The bowels are kept free by means of cathartics; an enema is never used, for it enhances the possibility of rectal infection.

In a protracted case where the cervix and uterus have become involved, the treatment is more tedious. In making intracervical and intrauterine applications, the patient should be in the dorsal position and the bivalve speculum used. After painting the cervix with iodine, the anterior cervical lip is grasped with a single volsellum forceps, any stringy discharge removed, and a small uterine sound gently introduced if the size of the canal demands it; otherwise, dilatation should be rigidly avoided. The intrauterine syringe is then introduced into the cavity of the uterus to the fundus and a dram of the iodine solution instilled, gently. While withdrawing, the solution should be allowed to escape from the syringe until the tip presents at the external os. The vagina is then treated as in acute cases.

The applications are repeated every third day both in the acute and chronic forms of the disease. Two days after the third application smears are again taken, for microscopic examination, from all the different structures involved. If the gonococci are still present, the treatments are continued, and in addition the vaccine treatment is begun, using large doses at short intervals.

If the urethra proper requires any direct local treatment, the applications should be preceded by cocainization.

In all cases hot douches are ordered to be taken in the recumbent position with hips elevated. From 4 to 6 quarts of hot normal salt solution are to be used, twice to four times daily, each time followed by a 1-quart injection of potassium permanganate solution, 1 : 5000, or picric acid, 1 : 250.

The patient is instructed to remove the gauze drain at the time of the first douche, which should be taken about four hours after the local treatment.

With this method the author has obtained uniformly encouraging results and frequently rapid cures. He is opposed to curettage in obstinate cases of gonorrheal endometritis where gonococci can still be demonstrated, though when the condition has reverted into a simple chronic hypertrophic or fungous endometritis, minus the gonococcus, local applications become useless, and a curettage is then done. O. Hofmann (Interstate Medical Journal, August, 1913).

* * *

Gonorrheal Vaginitis in Children, Treatment of.—In the gonorrheal vaginitis of children vaccines seem to perform their duty in an almost specific manner. The discharge is usually a mixed infection. Besides the gonococcus the organisms usually met with are the staphylococcus, streptococcus, diplococcus, colon bacillus, and pseudodiphtheria organ-

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ism. The culture medium used for the gonococcus is either human blood agar or hydrocele or ascitic agar. The other organisms grow readily on ordinary agar.

Five culture tubes are inoculated with the discharge, 2 being the special media and 2 of the plain agar. The tubes are incubated for forty-eight hours at 37° C., and the vaccine prepared, taking all the growth from all the 5 tubes. No local treatment should have been administered for one to two days before the taking of the cultures, to insure an uncontaminated product.

The initial dose of the mixed autogenous vaccine should be 25 to 50 million, and the succeeding doses be gradually increased. The amount to be given may be judged by the reaction and the clinical needs of the case. The interval between injections should not be less than five nor more than seven days. Smears should be made two weeks after the first dose and then every week to determine any improvement and note any change in the discharge, as some organisms disappear more quickly than others. These smears are always two in number, one stained with methylene blue and the other by the Gram method, counterstained with Bismarck brown. If after six weeks the case still needs treatment a second vaccine should be made, the first having probably lost its efficacy, and also because there may be some bacteriologic change in the case.

Forty cases were thus treated by the author. No other measure was used, except ordinary external cleanliness with mildly antiseptic solutions. Each case showed three negative smears, one week apart, before being discharged as cured. Not a case showed constitutional reaction or severe local reaction. The average number of injections given was 7. Maurice Wolff (Chicago Medical Recorder, September, 1913).

* * *

Nervous Fatigue, Hydrotherapy in.—Hydrotherapy, the author asserts, is by far the most important of all the physical measures used in the treatment of nervous fatigue, though the hydriatic prescription can be intelligently applied to the patient only when it is based on a thorough diagnostic knowledge of the case. The nervously fatigued do best in some small institution thoroughly equipped with apparatus by which the various forms of douche can be administered. A plan suitable for the home, however, or for those whose reaction is poor is the following: Dry pack for from one-half to one hour, followed by a cold sponge with water at a temperature of 70° F. for three minutes, with vigorous friction. As soon as this point is reached, dispense with the dry pack and give the dripping-sheet at 65° F. for three minutes, with good friction, while the patient stands in a foot tub of water as hot as can be borne. Reaction must be secured. This treatment is generally administered in the morning, and when this time is selected one should give the general wet pack at 65° F. for one hour at bedtime. When the patient is removed from the pack he is rapidly dried and no reaction is sought. The advantage of this method of treatment is to obtain the stimulating and tonic influences of the dripping-sheet in the morning and the sedative and sleep-producing effects of the wet pack at bedtime.

Another good method is to have the patient sit in a half-bath with water at from 102° to 104° F., while the attendant gives him an affusion at 80° F. At this point the patient should stand in the tub in water as hot as can be borne, while the affusion is given to the entire body, or the water is thrown with force against the body from a large dipper. This may be further modified by first immersing the body in warm water, then giving a salt rub or glow, followed by the affusion. The warm full bath (104° to 105° F.) for five or seven minutes, followed by the salt rub and finally by the cold shower at from 70° to 65° F., will be found useful. Reaction is essential.

Insomnia in cases of nervous fatigue can best be met by the cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at a temperature of 65° F. and covered by several layers of the same material to exclude the air. It should be worn all night. An excellent method, too, is the neutral bath at 94° to 96° F. for from twenty to sixty minutes.

For *headaches* and *head pressure* a fomentation applied for five or ten minutes twice, and followed by a cold compress, is very effective. If the headache is congestive, the hot foot bath should be used, followed by the ice-bag to the nape of the neck and the cold compress to the forehead. Sitz baths at 90° F., or cold foot baths, will often give relief.

The so-called *"neurasthenic spine"* is best met by general douche treatment to the spine. When this is not effective, the Scotch douche at from 120° to 125° F. for thirty seconds should be used, followed by a temperature of from 50° to 60° F. for from five to ten seconds, with four alternations. Sometimes the hot and cold spinal sponge at bedtime is successful.

Menstrual delay and *pain* are best met by the hot sitz bath at from 110° to 115° F. for ten to fifteen minutes, followed by cold affusion over the hips. The warm (not hot) vaginal douche favors the commencement of the period.

For *anorexia,* a glass of ice-water should be given one hour and the ice-bag applied for half an hour before meals.

Rectal irritation and *constipation* are greatly benefited by the use of the perineal and anal douche as hot as can be borne, followed by a cold douche of from 60° to 50° F.; stronger revulsive effects may be obtained by an alternate hot and cold application.

Hydrotherapy reinforces and makes much more efficient any drug medication administered in conjunction with it. Curran Pope (Journal of the American Medical Association, September 13, 1913).

* * *

Pleurisy in Children, Diagnosis of. —Pleurisies in children may be divided into two main types, tuberculous and non-tuberculous. The non-tuberculous exudate is visibly purulent almost from the first. It may be strongly suggested by a high leucocytosis, and it is usually cured by one or two tappings or by proper drainage. Cure may be hastened by the use of proper vaccines. The clinical course may be initiated by symptoms of pneumonia. Symptoms persisting after the date of crisis should lead to a suspicion of pleural

exudate rather than unresolved pneumonia. In acute, non-tuberculous pleurisy, the symptoms may be mainly abdominal. The pus invariably contains the specific microorganism responsible. Smears usually, cultures in the other cases, will determine the nature of the infection. This will rarely be found to be mixed, but will be caused by the pneumococcus, streptococcus, or staphylococcus. An appropriate vaccine that is preferably not a mixture should therefore be selected.

Tuberculous pleurisy is of more insidious development and is at first serious. High leucocytosis is rare or delayed until secondary infection occurs. The condition is practically never cured by the needle and often fails to respond to proper drainage. Shotgun mixtures of vaccine are valueless.

A purulent empyema which fails to show either by smears or cultures any bacteria is undoubtedly tuberculous. Secondary invasion by other bacteria occurs now and then, and these demand suitable vaccines. Rarely the tubercle bacillus may be found. Guinea-pig inoculations or cultures upon egg medium may aid in its isolation.

In children pericarditis is sometimes mistaken for pleurisy, and one should watch for pericardial exudate to explain thoracic pain, cough, and dyspnea. Such cases have rarely been tuberculous in the author's experience. Bacteriologic examinations are essential for proper treatment of these cases.

The author has been struck by the frequency of serous exudates in the pleural cavity in children showing no pain, no or little dyspnea, and no cough, but in whom there is noted a progressive loss of weight and anemia. The child appears languid or even stupid, and eventually the family realizes that it is sick. Finally, the presence of fluid is discovered and a gallon or more of serous exudate may be withdrawn. In some of these cases not a cell or bacterium may be found and the examination proves of no diagnostic worth. Some of these cases are those of mediastinal tuberculosis (lymph-glands), some are leukemias, and some are malignant growths. B. G. R. Williams (Medical World, October, 1913).

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Postoperative Intestinal Stasis, Prophylaxis of.—Abrasion of the peritoneal surface of the gut is a most common and frequently unavoidable cause of postoperative intestinal stasis. The method of overcoming the effects of this traumatism by means of mineral oil, introduced within the abdominal cavity at operation, has proved effectual and safe. The dose used by the author was 6 ounces, the oil being sterilized, poured into the abdominal cavity, and sponged over the coils of intestine.

Experimental studies in guinea-pigs and dogs showed that bland, non-irritating oil, represented by purified liquid petrolatum obtained from Russian oil, causes none of the changes characteristic of adhesion formation, viz., endothelial cell injury, production of a coagulable exudate, agglutination, organization, and finally scar production. The oil has no appreciable chemical action upon the tissues, nor a deleterious effect upon the animal, and is slowly absorbed. Used intra-abdominally in

sufficient quantity, it prevents to a great extent the formation or recurrence of adhesions. It fills the lymphatic channels leading from spaces denuded of peritoneum or opened by incision, thus limiting septic absorption, and, through preservation of the endothelial cells, prevents extension of peritonitis. Oil is used to advantage in place of salt solution, upon abdominal pads or gauze introduced into the abdominal cavity during operation, and, in exceptional cases, poured into the wound. It protects the abdominal contents from much injury and eliminates or minimizes postoperative vomiting, abdominal pain, and intestinal stasis. W. F. Burrows (Journal of the Medical Society of New Jersey, November, 1913).

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Pregnancy, Value of Abdominal Measurements in.—From a statistical study of 300 labor cases the author has computed a rule for estimating the week of pregnancy from the measurements of the height of the fundus. This has been found of considerable value, especially in cases where no menstrual history can be obtained. The rule is: Measure with a tape the height of the fundus above the symphysis in centimeters, making allowance for settling when present, and add 2 to measurements between 22 and 26 cm., 3 to measurements between 26 and 30, 4 to measurements between 30 and 32, and 5 to measurements over 32, which sum will equal the probable week of pregnancy. In about three-fourths of all cases it is thus possible to estimate as closely as with Naegele's rule the date of probable delivery. A. B. Spalding (Jour. Amer. Med. Assoc., September 6, 1913).

Protein Metabolism, Rôle of Thyroid Gland in.—On the basis of a large number of chemical analyses conducted in the last twenty years on both normal subjects and individuals suffering from chronic joint disturbances, the author holds that two forms of gouty disorder should be distinguished, the uric and the puric forms, each variety corresponding to a distinct functional metabolic defect. In chronic joint cases not of gouty nature, the metabolism of nucleins does not appear to be influenced,—or at least it is not affected to the same extent as in the gouty. In these cases there is more particularly a disturbance in the metabolism of the proteins; there seems to be a decrease in the power of deamination in the cells of the entire organism. This functional disorder is probably related to insufficiency of the thyroid gland. Normally, according to the author's investigations, the thyroid secretes a deaminizing hormone which reacts upon the intracellular reactions and influences the course of protein metabolism. When thyroid preparations are first given to the non-gouty chronic joint cases, urinalysis shows an increase in the ammoniacal salts from which urea is derived. Slosse (Académie royale de Médecine de Belgique; Presse médicale, October 29, 1913).

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Puerperal Fever, Treatment of.—Intravenous injections of distilled water were administered by the author in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. The author had previously found in rabbits that 8 c.c. of distilled water per kilogram of body weight could be injected with-

out harm. Clinically it was found that after an injection the red cells and leucocytes might show either an increase or a decrease. Patients in whom the red cells increased, whatever might be the severity of the attendant septicemia, were observed generally to recover, while those in whom the red cells fell off constantly in spite of the infusion generally succumbed, though local operative measures might be productive of benefit. In an hour or an hour and a half after a distilled water injection there usually occurs a chill, with a rise in temperature. By evening or the following morning, however, the temperature will have fallen to normal, sweating usually accompanying the drop. W. J. Ilkewitsch (Zentralblatt für Gynäkologie, September 20, 1913).

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Puerperal Sepsis, Prophylaxis of.—Lactic acid is asserted by the author to be an important element present in normal vaginal secretions and lacking in pathologic secretions. Whenever irrigation of the vagina with boiled water through a speculum yields a yellowish fluid, he irrigates once daily for at least ten days with a 1:200 solution of lactic acid. This measure, applied for the last three and a half years to every parturient woman in which it was indicated, reduced the morbidity as regards puerperal fever from 28.6 to 7.6 per cent. Women with pathologic vaginal secretions thus prophylactically treated show no greater tendency to infection than those with normal secretions. The lactic acid seems to overcome the pathologic bacteria and favors the growth of those normally present.

The author also points out the danger of full baths before delivery, mentioning several cases of severe puerperal fever for which no cause could be found except the entrance of bath water into the vagina. P. Zweifel (Zentralblatt für Gynäkologie, September 27, 1913).

* * *

Pulmonary Apices, Percussion of.—The author holds that when auscultatory signs make their appearance in pulmonary tuberculosis, it is an indication that the infiltrate has softened and broken through a bronchus, and the case can no longer be considered incipient. Discussing percussion as a means of early diagnosis, he calls attention to the fact that the percussion stroke penetrates only about 6 cm. into the chest. Centrally located airless areas, such as bronchial glands, etc., surrounded by normal lung-tissue, cannot be demonstrated, even by very strong percussion. The stronger the blow, the more its force is dissipated along the elastic ribs and intercostal spaces, which vibrate strongly and give no clue as to the condition of the spot lying vertically beneath the stroke.

Light percussion is sufficient in most cases, especially at the apices. The contrast between the resonance of the air-containing tissue and the deadness of the airless spot is striking when light percussion is practised. The sound becomes entirely inaudible when areas of defective resonance are reached. In small, disseminated foci of airless tissue, excessive force of the percussion stroke may evoke a normal or overresonant note. If on increasing the force of the stroke the dullness remains, one may safely conclude that there is an extensive area of airless tissue.

The contact of the pleximeter

finger with the chest wall must not be too firm, thus avoiding tension of the intercostal muscles and their conversion into large pleximeters. Care must also be taken to percuss only intercostal spaces, because placing the pleximeter finger over a rib prevents localization.

In most cases of tuberculosis shrinkage of the apex occurs quite early. Upon mapping out the resonant areas on both sides, anteriorly and posteriorly, any disparity appears quite vividly. For practical purposes it is sufficient to percuss the apex in its true anatomic position, which is anteriorly between the heads of the sternocleidomastoid, reaching about 3 or 4 cm. above the clavicle; and posteriorly, close to the spinal column, to the height of the vertebra prominens. A shorter apex on one side is of immense significance. The resonance also must be of about the same intensity on both sides.

Percussion of the supraspinous fossæ proper, over the scapulæ, and anteriorly between the trapezius and the sternocleidomastoid, is a vain effort—no pulmonary tissue is located there.

In infiltrated apices a long and held inspiration gives a duller note on percussion than is found over the opposite, healthy side; this is often of great value in doubtful cases.

In the interpretation of percussion findings in the apices, the sources of error are about the same as in radiography. Whether airless lesions are tuberculous, and whether the process is active at the time, can only be determined by careful study of the history, symptomatology, and course of the disease. If the latter point to a tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. Maurice Fishberg (New York Medical Journal, October 25, 1913).

* * *

Rabies, Treatment of.—Potassium iodide has recently been used by the author as an adjuvant to the customary treatment by inoculation in hydrophobia. A 2 per cent. solution of the salt is used, each patient taking a tablespoonful or dessertspoonful of it at frequent intervals throughout the course of preventive injections. In 3 cases of abortive rabies the symptoms promptly disappear after the use of potassium iodide, while ordinarily the opposite condition prevails, the manifestations growing worse. It is especially in cases where the infection has existed in latent condition for some time that the author recommends the use of potassium iodide. He thinks it might also be of value in the prophylaxis of rabies. The drug may so affect the central nervous tissues that their affinity for the virus of rabies is removed. Traumatism, abuse of alcohol, and emotional stress are to be avoided in cases where the presence of the virus in a latent form is suspected, as these influences tend to excite it into action. J. Koch (Deutsche medizinische Wochenschrift, October 16, 1913).

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Respiratory Affections in Young Children, Treatment of Acute.—The administration of hot baths in acute bronchitis, bronchiolitis, and bronchopneumonia in young children is strongly recommended by the author. Such baths, followed by brief affusion of cold water, reduce fever, stimulate expectoration; deepen the breathing, thus obviating atelectasis and stagnation

of secretions; exert a sedative, soporific effect, improve the appetite, stimulate elimination through the skin, and, in fact, often seem to act specifically in shortening the course of the disease. Uniform recovery has been the rule since these baths have been used. The temperature of the bath water is 41° C. (105.8° F.), more hot water being added as cooling occurs, and the patient is bathed every three hours, up to five times a day. The baths are particularly appropriate for feeble children who become chilled at the periphery while the internal temperature is abnormally high. The weaker the child and the higher the fever, the more frequently the baths are given. Where the temperature is not above 39° C. (102.2° F.) a ten-minute bath is given three times a day. The hot bath is not contraindicated where the temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. The hot bath causes an actual fall in the rectal temperature of several degrees, attaining its maximum one-half to one hour after the bath. The theory that hot baths promote congestion of the internal organs is not supported by the author's observations. At the conclusion of each bath a nurse holds the head of the child in both hands, preventing entrance of water in the nose and mouth, and elevates the child from the hot water so that the back of the neck is exposed; cold water is then dashed once over the neck, causing a reflex gasp for breath, bringing into play the auxiliary respiratory muscles. The child is next reimmersed momentarily in the hot water and cold water poured on the chest, after which the patient is dried, wrapped in warmed clothes and placed in a warmed bed. No heart depression follows, no matter how feeble the infant. The baths are continued once daily into convalescence if the patient coughs. As a prophylactic measure against nasal catarrh the author also uses the hot bath, omitting, however, the subsequent cold affusion, and covering the child warmly enough to induce perspiration. In various other affections in infants with poor peripheral circulation, even where there is no fever, the hot bath is likewise useful. Arneth (Deutsche medizinische Wochenschrift, September 25, 1913).

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Skin Diseases, Vaccine Treatment of.—The author comments upon the lack of uniformity and certainty still prevailing as to the results of vaccine treatment in skin affections. He holds it to be extremely important to ascertain everything about the origin of the disease before starting the vaccine. Thus, it is poor practice to attempt to treat severe acne by inoculation without relieving any dyspepsia found present, or to treat chronic eczema of the lips with an autogenous staphylococcic vaccine, when the whole trouble is due to an irritating mouth-wash.

In *furunculosis* the vaccine treatment is perhaps seen at its very best, failure being quite exceptional. The author has found it best to give 250 million staphylococci as the initial dose, and raise this rapidly afterward. In every case where the furunculosis is localized, as on the neck, efforts should be made to discover the local conditions at work and combat them by other appropriate means.

Whereas the *impetigo of Bockhart* yields almost uniformly good results

with the vaccine treatment, *sycosis* and *chronic pyogenic eczematoid dermatitis,* especially in long-established cases, show only a remarkable improvement at the beginning of treatment, followed by persistent relapse, which will not yield to further inoculation. In the exceptional cases of *impetigo contagiosa* in which the disease refuses to yield to local measures, a small number of staphylococcic inoculations—usually, in fact, a single one—will bring about prompt cure.

In severe *erysipelas* suitable doses of streptococcic vaccine often act in an almost miraculous manner. A single small inoculation,—say of 5 million,—preferably of autogenous vaccine, will usually cause a critical fall of the temperature, and a second or third at about five days' interval will usually cause complete resolution.

In chronic streptococcic infections, however, whether superficial or deep, such good results are not obtained.

In *acne,* vaccine treatment is a useful adjunct, but many cases will not yield to it alone. It is a great waste of time to omit suitable local treatment. Neither the mixed vaccine nor the specific microbacillus alone has any effect in subduing the fundamental seborrhea.

In *lupus vulgaris* old tuberculin acts much better than any other. The author begins very cautiously, then makes a steep rise in the dose as soon as one dose ceases to call forth a reaction. In 1 or 2 cases the author has had remarkably good results. In cases where the Finsen light cannot be applied, the inoculation treatment is capable of great service; probably it may be combined with it with advantage.

In *tuberculous ulcers* and *Bazin's disease* the same method yielded considerable success, though more caution was found necessary as to dosage than in lupus. In indolent ulcers persisting for many months, 1 or 2 doses of old tuberculin will usually cause complete healing in a week or two. Arthur Whitfield (British Journal of Dermatology, October, 1913).

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Syphilis, Salvarsan in.—The author asserts that the spirocheticidal action of salvarsan is an indirect one, intervention of the body fluids being probably essential to its activity. In the test-tube the spirochetes can fix salvarsan, but they are not killed by it; their destruction is complete only in the human organism. Wright has shown an analogous phenomenon to hold good with respect to pneumococcus.

Salvarsan should always be employed in an alkaline solution, as an acid solution destroys the proteins of the blood and is more toxic. A rabbit was given 64 injections of alkaline salvarsan solution, the total amount corresponding to 184 Gm. of salvarsan in man, without producing any microscopic changes in the tissues. In the case of the acid solution, on the other hand, the animals generally succumb after the second to the fourth injection.

The drug has no neurotropic property. Ulmann showed that after the injection of salvarsan in rabbits the brain and other portions of the central nervous system contained only very small amounts of arsenic—less than is found after the administration of inorganic arsenicals. In most cases the brain contains no arsenic at all.

Febrile reactions following salvarsan injections are sometimes due to errors in technique (relating to the water used or the glass of which receptacles are made), but in most instances they arise from the fact that salvarsan is injected precisely during the eruptive stage, when the organism is saturated

with spirochetes. Liberation of toxins from the latter is responsible. Fever may be prevented by preliminary mercurial treatment, and in any case does not develop after the second and subsequent injections. It is to be borne in mind, too, that salvarsan brings about destruction of a multitude of other micro-organisms which may be present in the system, and that the death of these can also give rise to fever.

That neurorecurrences are in reality recrudescences of syphilis and indicative of inadequate salvarsan treatment is now admitted by most observers.

Three conditions absolutely contraindicate the use of salvarsan, viz., Addison's disease, the status thymicolymphaticus, and cancer. Ehrlich (International Medical Congress, 1913; Presse médicale, August 30, 1913).

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Tuberculosis, Prognosis in Pulmonary.—A marked decrease in the percentage of lymphocytes in the blood is a bad sign in pulmonary tuberculosis. Each tubercle is surrounded by a wall of lymphocytes, and while in the early stages of tuberculosis there is an extra production of lymphocytes keeping pace with the defense set up against the morbific agent, such demands on these cells may later be made by extensive tuberculous lesions that the proportion in the blood sinks below normal,—even to 5 per cent. Affections such as measles and typhoid fever, which likewise make special demands on the lymphocytes, thereby render the system vulnerable to tuberculosis or tend to remove the barriers surrounding already existing, but as yet latent, tuberculous foci. Testing the urine for urochromogen also affords valuable prognostic information. This is done by diluting urine in a test-tube with 3 parts of water, pouring half of the resulting dilution into another tube, and adding to either tube 3 drops of a 1 : 1000 solution of potassium permanganate. If a canary-yellow color develops, the test is positive. The appearance of urochromogen in the urine indicates that a previously localized tuberculous process is tending to become general and seriously threatens the system as a whole. In 84 cases in which the urochromogen test was compared with the cutaneous tuberculin test by the author, the results agreed in 66 instances. The ultimate event in these cases showed that in nearly all instances the urochromogen had furnished more accurate prognostic indications than the tuberculin reaction. Whenever urochromogen exists in the urine the prognosis is unfavorable, especially if it has been present for some time. The test becomes negative again when the system regains the upper hand over the infection. M. Weiss (Wiener klinische Wochenschrift, October 16, 1913).

Book Reviews

A Clinical Manual of Mental Diseases. By Francis X. Dercum, M.D., Ph.D., Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. Octavo of 425 Pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $3.00, net.

In this new manual on psychiatry the author has taken up the subject largely from the standpoint of clinical medicine. Special stress is laid upon the clinical pictures commonly met with, upon the prognosis, and upon treatment. The psychologic interpretation of the symptoms of insanity—an evidence of what the author designates "the recrudescence within recent years of speculative and metaphysical psychiatry"—has been only briefly, though

clearly and suggestively, presented. Any more than this, in the present state of the subject, would, as the author believes, be superfluous as regards the needs of the student and general practitioner. "Our knowledge of mental diseases," Prof. Dercum forecasts, "will doubtless advance in two parallel directions: namely, that of internal medicine and that of psychologic interpretation. To the practising physician, to the needs of state medicine, of public hygiene and prevention, that of internal medicine will ever prove the most important."

The author's classification of mental diseases, as exemplified in this work, is a relatively simple one. In one chapter are considered delirium, confusion, and stupor as general manifestations of infection, poisoning, or other common conditions, these constituting the simplest and most frequent mental disturbances with which the practitioner has to deal. In subsequent chapters are taken up as distinct groups melancholia, mania, and circular insanity; the heboid-paranoid group (dementia præcox; paranoia); the neurasthenic-neuropathic insanities, and, finally, the dementias. Part II, occupying most of the second half of the book, is on mental disturbances not covered in the first part, more especially those related to the somatic affections, such as intoxication by various drugs, metabolic disorders, diseases of the viscera, ductless glands, and nervous system, and the child-bearing state. The practitioner will thus find useful information concerning the mental phenomena met with in diabetes, epilepsy, chorea, the parasyphilitic diseases, trauma, etc. In another chapter mental diseases as related to age are considered; next certain mental diseases not ordinarily included under insanity, such as borderland manic and paranoid states (the mattoids); states of moral deficiency and criminality; sexual abnormalities, and hypochondria. The work closes with sections on insanity by contagion, psychoanalysis, and the treatment of mental disease in general. The book is written in the author's customary unimpeachable style, and by reason of the careful selection and arrangement of the facts, as well as their clear presentation, cannot fail strongly to appeal to its readers.

Diagnose und Therapie der Herzkrankheiten. Von Prof. Dr. Ludwig Braun, Primararzt in Wien. Second, completely Recast Edition. Octavo of 362 Pages, with 37 Illustrations. Berlin and Vienna: Urban & Schwarzenberg, 1913. New York: Rebman Company. Paper Binding, 15 marks ($3.75).

Since the first edition of this concise textbook was published in 1903, remarkable advances have been made in cardiology, necessitating extensive changes and additions to the work. Besides, the scope of the book has been enlarged to include diagnosis as well as treatment. The more particular requirements of the general practitioner and student have, however, as before been kept in mind, and refinements of diagnostic procedure referred to only in so far as they are likely to be available to the former. Direct methods of examination, as well as drug and physical treatment, are dealt with at length in both the general and special sections, thus affording as much assistance as possible in a work of this size to the practitioner far from central facilities. Stress is laid rather on the condition of the heart muscle *per se* in prognosis than on the nature of the valvular or other localized lesions under which the heart may be laboring. In the section on general diagnosis the various methods of physical examination are described in detail, including arterial sphygmography, the securing of tracings of the venous pulse, blood-pressure estimation, plethysmography, etc. In this section the significance of the various forms of cardiac arrhythmia is duly set forth, and the indications as to treatment in each instance mentioned. A section on the symptomatology of heart affections follows, and after this the action and uses of each of the circulatory remedies are taken up in detail. Diet, pneumatotherapy, and electrotherapy are also discussed, while a special chapter by Prof. A. Strasser is devoted to hydrotherapy, and another by Dr. A. Bum similarly to mechanotherapy. The "special" discussion of heart disease—from the standpoint of the lesion present—occupies only 70-odd pages at the close of the volume. Much original material, however, will be found in this portion of the book, which will undoubtedly be appreciated by the German-reading practitioner.

Sterility in the Male and Female and its Treatment. By Max Hühner, M.D., Chief of Genitourinary Department, Harlem Hospital Dispensary, New York City; Formerly Attending Genitourinary Surgeon, Bellevue Hospital, Out-Patient Department, and Assistant Gynecologist, Mount Sinai Hospital Dispensary, etc. Pp. xvi + 262. New York: Rebman Company, 1913.

This book is the product of many years of original research on sterility, the material having been obtained by studies of patients, both male and female, in several New York clinics, as well as of private patients. Among the subjects specially studied were the question, how far, at various periods after coitus, spermatozoa penetrate in normal and pathologic cases, and the effect of douches, catarrhal secretions, inflammations of the genitalia, gonococci, prostatic fluid, various chemicals, etc., on spermatozoa. An original method of treatment is suggested for azoöspermia due to previous double epididymitis, consisting in the aspiration of the testicle through a large-sized hypodermic needle. In performing such aspirations in 13 cases of azoöspermia the author found spermatozoa in 38½ per cent. of the cases in the fluid obtained. In 15½ per cent. of the cases motile spermatozoa were

found and in the other 23 per cent. motionless spermatozoa. In the single case of sterility in which the author has injected into the cervix the aspirated testicular fluid, which contained live motile spermatozoa, success as regards impregnation was not obtained. The author presents a systemic study of the influence of effluvium seminis (or the flowing out of semen from the vagina after coitus), describes in detail a technique for recovering spermatozoa from the female genitals—a procedure which he considers preferable in establishing the responsibility for sterility to examination of semen in the condom—and sets forth a complete system for the treatment of sterility, based upon his own investigations. A preoperative diagnosis of the cause of sterility, he points out, can be made in many cases. The second half of the book is taken up by a complete history of the author's experience in examining 475 specimens for spermatozoa, followed by statistical tables and a bibliography.

Selected Papers of Dr. Carlos J. Finlay. Octavo of 657 Pages. Havana: Department of Health and Charities, 1912.

This large book, partly in English and partly in Spanish, represents a compilation of most of the papers of Dr. Finlay, published by decree of the Provisional Governor of Cuba at the close of the second American intervention in that island. As stated by Dr. Suarez, Secretary of Health and Charities, in the preface, the work of Finlay opened the previously closed path of progress and civilization in tropical America, and the confirmation of his theory of the transmission of yellow fever by the mosquito may be said to have been the most important step forward made in that region since its discovery by Columbus. The work begins with biographic notes by Dr. Juan Guiteras. Then follow in succession about 40 papers on yellow fever by Finlay, some with an English version. The first papers were published at far back as 1881, and in them Finlay first expounded his theory of mosquito transmission. The last paper was one read at the Berlin Congress on Hygiene and Demography in 1907. At the close of the volume are a couple of papers on cholera transmission and filariasis, followed by a complete list of Finlay's numerous publications on both typhoid fever and other subjects. The compilation forms a splendid monument to the industry and foresight of one of the greatest of Cuba's sons.

Essentials of Prescription Writing. By Cary Eggleston, M.D., Instructor in Pharmacology, Cornell University Medical College, New York City. 32mo of 115 Pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $1.00, net.

This, while the smallest, is also one of the most wisely planned books on prescription writing the reviewer has seen. Care has been taken to select the really essential facts, and, furthermore, so to order them that the student will learn the subject most easily and effectively. The chapter on Latin grammar is short but complete, supplying information both on declension of pharmaceutic (and not other irrelevant) words and the meaning of the various terms and phrases commonly used in pharmacy. Special chapters are devoted to the grammatic construction of the prescription, weights and measures, the practical writing of prescriptions, dosage, vehicles, incompatibility, modes of administration, and the suitable methods of prescribing each of the various kinds of official preparations. Inclusion of a few more illustrative prescriptions would be advantageous, in the reviewer's estimation. The work as it is, however, can be very warmly recommended.

Ionic Medication. By H. Lewis Jones, M.D., Fellow of the Royal College of Physicians of London; Consulting Medical Officer to the Electrical Department in St. Bartholomew's Hospital, etc. Pp. viii + 151. Philadelphia: P. Blakiston's Son & Co., 1913. Cloth, $1.50, net.

The evidence which the author has assembled in this concise little volume shows plainly the value of ionic medication as an addition to available methods of treating disease. While academic discussions still take place concerning the question whether any effective penetration of the ions occurs or not, good results have undoubtedly been obtained with this procedure, and that is the most essential point for the present. In the first two chapters the theory and technique of ionization are taken up. Chapter III is on the antiseptic metallic ions,—zinc, copper, mercury, and silver,—the uses of which in various forms of ulceration, sinuses, trachoma, ozena, antral suppuration, otorrhea, deafness, rectal fissure and fistula, hemorrhoids, urethritis, boils, ringworm, alopecia, etc., are set forth. In the next chapter are taken up lithium ionization in gout, magnesium for warts, radium, quinine in neuralgia, and the introduction of alkaloidal bodies such as cocaine and epinephrin. In Chapter V the uses of the salicylic ion in the neuralgias, arthritis, lumbago, sprains, acne, etc., are discussed; in Chapter VI the use of the chlorine and iodine ions in fibrotic and superficial tuberculous conditions, etc., and in Chapter VII miscellaneous ions such as uranium, arsenic, lactic acid, etc., are considered, and the process of negative electrolysis explained. The experience of numerous observers with ionization in the various conditions referred to is given in the text. The book is simply and clearly written, and affords an excellent condensed account of the entire subject.

The General Field

Conducted by A. G. CRANDALL

The Increase in Pneumonia

Pneumonia, which during the Philadelphia summer practically becomes negligible, assumes greater importance during the colder season. During the hot months of July and August, the air is constantly surcharged with floating dust particles, which are said by sanitarians to contain all conceivable forms of germ life. In the winter season frequent rains reduce the dust in the air to a minimum. And yet the number of pneumonia cases reaches an appalling figure in winter.

Pneumonia develops among the poorly fed and poorly housed; on the other hand, it also develops among the well-to-do.

Out of the fog of uncertainty as to the real origin of this disease, however, certain deductions can be safely made, viz., that pneumonia is a disease of the colder temperatures to which people who are accustomed to hygienic living and who protect themselves from the extremes of cold by suitable clothing are reasonably immune, although the well-fed who are habitually exposed to cold, and therefore become accustomed to it, are seldom attacked. Those who live luxuriously, accustomed to warm interiors, but who occasionally venture out insufficiently protected, seem to rank with the poorly fed of unhygienic habits in their susceptibility to the disease.

Reduced to its elements, the prevention of pneumonia seems to rest largely upon the avoidance of any excessive chilling of the body.

Moderation

Because the English business man takes a long time for lunch and then knocks off for tea drinking later in the afternoon, he is the object of ironic comment not only by the thrifty Scotchman and the lavish Irishman, but especially by the dollar-chasing American.

But it must be apparent to these critics that, all being considered, the Englishman gets a great deal of solid comfort out of life, while his grip on the world's commerce is as yet unshaken. Therefore, according to prevailing standards, the Englishman is a very successful man.

And the ruling factor in this success is that moderation which is the cornerstone of good judgment.

It is the lack of physical poise resulting from the habit of haste and restlessness which leads to half-baked business schemes, and the demoralized kidneys often associated with a desperate attempt to make these schemes succeed. After fifty "getting in bad" in business is a conspicuous etiologic factor.

* * *

Woman as an Executive

Under the stress of modern business life emotionalism cuts a sorry figure. An executive holding an important position, whether in educational lines or in any of the departments of commercial life, must preserve that equanimity which is essential to the exercise of sound judgment.

Aside from the dramatic stage, temperament in that acceptance of

the term which makes it synonymous with emotionalism, has no legitimate place. Business successfully conducted is a matter of mathematics rather than nerves.

According to the latest census, there are 17,000,000 unmarried men in the United States. Presumably there is an equal number of unmarried women. A considerable proportion of these women are self-supporting, and occasionally there is developed a woman who shows capacity for an executive position which enables her to compete successfully with men who may have been regarded as qualified to hold similar positions. It is a fair guess that these successful women executives have succeeded in divesting themselves to a very large extent of the emotional part of their equipment.

The recent election of a woman teacher to a highly responsible position in Philadelphia was the occasion for a very acrimonious discussion on the part of the School Board. This was undoubtedly due to an undercurrent of belief that women as a class are temperamentally unfitted to hold positions requiring not only the exercise of most excellent judgment in various details over which they have supervision, but the display of perfect equanimity at all times as regards the criticism which they are sure to encounter, some of which may be justified and some of which may be entirely unreasonable and unfair. Men in similar positions usually accept such criticism and discount it in advance. They take the position that they will be guided by their best judgment, and, resting on that foundation, will make themselves immune to the comments of those who are actuated by ignorance of the facts, or by normal disposition to be captious and harsh in their estimate of the motives of others.

Until women, who may be called upon by the development of events to positions of responsibility, are wise enough to assume a similar attitude of indifference to criticism, it may be expected that their important missions will fail.

* * *

A Mixed Subject

The desire to improve others is deeply implanted in the human breast. The present eugenic movement now in full blast is one of the most recent examples.

The basic argument in favor of the prevailing brand of eugenics is that at least as much care should be shown in breeding human beings as in stock raising. No widespread crusade was probably ever built up upon a more flimsy foundation.

There are no authenticated instances of marked incompatibility of temperament between the sexes in the breeding of horses, cattle, or other animals. Hence we can eliminate from this unique comparison a most generally admitted cause of inferior human progeny, namely, lack of congeniality between parents. The offspring of the dutiful daughter who reluctantly marries the man selected for her by her worldly wise parents are usually far inferior to the children of the more willful daughter who elopes with the man of her choice.

The marriage of first cousins who have both inherited some family weakness or who are marked examples of family type is regrettable; but such marriages seldom occur because of the lack of mutual attraction.

When these marriages do occur among cousins who have opportunity for a reasonably wide circle of acquaintances, the law of natural selection can usually be depended upon to prevent serious errors.

When cousins marry who are normally attracted to each other, the result of such a union may be a possible Abraham Lincoln, whose parents were of the now frequently prohibited consanguinity.

* * *

Limiting the Sphere of Action

Just why it is that so many physicians hedge their own activities about with so many artificial barriers is at present hard to understand.

Nearly every doctor who has been long enough in practice to acquire a reasonable degree of reputation has a certain number of families under his professional guidance who regard him as the one physician who is an absolutely safe counsellor. And yet these patients' confidence is often sadly misplaced because of the doctor's abnormal modesty.

It would not be professional, of course, for a family practitioner to be drumming up trade. But on the contrary, if a family reposes such confidence in their physician as to eliminate all other practitioners from their consideration, it then logically becomes the duty of the family adviser to exercise a watchful supervision over each member of the family, so as to prevent the gradual development of a functional difficulty to the more serious stage.

Absolutely normal function is seldom found in any individual. All deviations are a physical handicap and yet millions of adults who pronounce themselves to be in good health, but are not, are having their efficiency impaired and their lives shortened because, unless they are downright ill, they never trouble the doctor and he never troubles them.

Such a state of affairs is hardly consistent with an enlightened and practical age.

* * *

Safer Than at Home

The Pennsylvania Railroad reports that, although they have carried 111,000,000 passengers during the year 1913, not one was killed by a train accident on their line.

This is a record of which to be proud. The conclusion which might naturally follow this report would be that there was more danger of people being killed by falling down stairs in their own homes than in taking a train over the Pennsylvania line.

As the year's harvest of deaths by railroad accidents will, however, no doubt prove to be an excessive one, taking the country through, it serves to emphasize the difference between scientific methods of conducting a railroad and the haphazard methods which unfortunately still prevail on many lines. The predominating factor in this gratifying immunity from accidents is undoubtedly identified with the magnificent equipment of the road. The railway system which operates a large number of trains on a single track cannot offer the same degree of safety to its traveling patrons.

* * *

Panic

Those optimists who consider that humanity has made considerable progress since the stone age always

get a jar when people trample each other to death in some crowded hall or factory. At such times the advancement of centuries of development seems to have vanished, and mankind sinks to the level of the sheep.

Once in a while such a mob of terrified humanity can be held in check if confronted by a cool-headed person with a pistol, but usually control is impossible when once the real mob panic is in evidence.

All the safeguards which human intelligence can devise are of no avail when the restraints of civilization are dispelled in a moment by the elementary instinct to escape.

The animal still predominates and all flesh is grass.

* * *

The Public Pound in Texas

In the early days in New England, it was the custom at the annual town meeting on the first Tuesday in March to elect a pound keeper. The functions of this official were to provide shelter for such domestic animals as might have strayed far from home and thereby become a public nuisance.

Just now the State of Texas is acting as a public pound keeper for the United States of America. When the climate of Mexico gets too hot for certain non-combatants they hurriedly prepare a few rations of *chili con cani* and start for the Texas border. They usually arrive there hungry and as hospitality is one of the predominating instincts of Texas they do not remain hungry very long.

Just how many refugee Mexicans there are in Texas cannot be definitely learned, but there are enough of them to present quite a problem, and Texas is wondering how long it must provide board and lodging for destitute Mexicans.

* * *

The Meanest Man

The catalogue of meanest men contains some choice specimens without doubt. Among them may be mentioned that apology for a sneak thief who robs the baby on the way to the corner grocery store, and the boss of the construction gang who docked a man for the time lost while he was being blown up in the air by a premature explosion.

There is some excuse for a man who robs a hen roost, as he may be hungry; and although it is hard to find any excuse for the financier who robs widows and orphans, he and all his above-named associates are to be commended in comparison with the man who sells adulterated or impure foods for family use.

In most cities it is now possible for a man to work off "bob" veal, stale fish, more or less putrid poultry, and if detected escape with a small fine. We have had a superabundance of legislation on a great many questions the ethics of which are still more or less indefinite in the minds of those who know the most about them. Time would be much better spent in finding effective remedies for the prevailing tendency among venders of food products to take chances with the public health for the incidental large profits.

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Original Articles and Summaries of Selected Articles

EXOPHTHALMIC GOITER FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.

BY JOSEPHUS T. ULLOM, A.M., M.D.,

PHILADELPHIA, PA.

IN carefully going over my experience with exophthalmic goiter, it has become apparent to me that there are certain difficulties confronting the general practitioner in this disease that are not fully appreciated by the surgeons and consultants, who usually see these patients only when the disease is fully developed and easily diagnosed, and when they are more or less prepared to accept the advice given them.

In the last few years many surgeons have become firmly convinced that this disorder is a surgical malady and should be turned over to them as quickly as should a case of appendicitis. They have held, furthermore, that many of the deaths occurring from this disease are due to failure on the part of the practitioner to recognize the cases sufficiently early, and have declined to operate upon patients when referred because of the extremely bad prognosis in advanced cases.

There is much truth in their contention; yet something is to be said in defense. It is my intention, in this paper, to present and describe some of the difficulties of diagnosis, and to try to formulate a practical method of procedure for the general practitioner.

With increasing interest in hyperthyroidism, many more cases are being observed, and many latent or larval forms are recognized that formerly passed unnoticed. Numerous cases formerly labeled "hysteria," "neurasthenia," and "nervous heart" are now fully recognized and appropriately treated. The

four cardinal symptoms of exophthalmic goiter—tachycardia, struma, exophthalmos, and tremor—do not always coexist, and often in the beginning only one of these symptoms is present, *e.g.*, paroxysmal tachycardia. Again, one may find one or more of the cardinal symptoms, but not in a well-developed form, and the complaint which brings the patient to the physician is one of the host of minor symptoms, such as nervousness, abnormal susceptibility to fatigue, profuse diarrhea, a sensation of heat, or loss of weight. The patients are likely to present a great many nervous phenomena and symptoms referable to other organs, among them nausea and vomiting, diarrhea, flushings and sweatings, a feeling of heat, dyspnea, susceptibility to fatigue, edema; psychic manifestations, such as extreme irritability, indecision, volent temper, or even attacks of mania, and trophic changes, such as falling of the hair, brittle nails, skin eruptions, bronzing, and areas of pigmentation. Schultz[1] gives the percentage of the various symptoms as follows: Goiter, 100; tachycardia, 94; palpitation, 94; exophthalmos, 92; psychic disturbance, 68; tremor, 66; headache, 52; insomnia, 40; sweats, 36; loss of weight, 30; von Graefe's sign, 30; vomiting and diarrhea, 28; Stellwag's sign, 22; falling of the hair, 18; Möbius's sign, 14; nosebleed, 14; polyphagia, 14; polydipsia, 12; pressure in the eyes, 12; edema, 10; hot flushes, 10; friability of the nails, 8; spots before the eyes, 6; pigmentation, 6. Briefly, in a well-developed case the diagnosis is usually easy, but when only a minor symptom is presented time alone will indicate its true identity.

In illustration of the manner in which the general practitioner often sees a case develop, the following histories of three patients are introduced:—

Case I. E. N., a girl of 12, came for coryza, and a marked tachycardia was noted. The pulse rate was persistently over 120, and on the slightest excitement rose to 150. No cause for this condition could be found, and it was thought best to keep the patient at rest for a few days. The tachycardia became much less and only developed upon excitement; the patient was therefore allowed her freedom. She was carefully watched, and one month later developed a small goiter; the tachycardia became pronounced and there was marked nervousness and irritability.

Case II. A. E., aged 48. This woman had always been very nervous, irritable, and subject to attacks of unreasonable jealousy. She suddenly began to lose weight and complained that she easily became fatigued, but had no other signs of the disease. About one month later, she began to feel ill; she developed a marked tremor and exophthalmos, the latter being very noticeable. She never showed a marked tachycardia, the pulse rate being usually about 90. Psychic and nervous phenomena were well marked in this patient, and she had some nausea and vomiting, but her initial symptoms were fatigue and loss of weight.

Case III. L. H., a woman of 58, had always been very nervous, and, while apparently healthy, never felt well. In May, 1911, she had some slight edema of the feet, which could not be accounted for, as her heart and kidneys were apparently healthy and the blood examination was negative. The edema was very slight, however, and soon disappeared. In July, 1911, while in Maine for the summer, she began to have a moderate diarrhea and lost weight; this continued into the autumn. She paid little attention to either condition, however, as she had been stout and the loss of weight was not disagreeable. She did not consult a physician until December, when the diarrhea became so severe that she was confined to bed. At that time there was noted a marked

tachycardia and some bronzing, but no other symptoms. Graves's disease was thought of at this time, but the diarrhea and bronzing suggested the presence of some malignant disease in the pancreas or intestine. The diarrhea was of the watery type, without mucus or undigested food. The diarrhea improved, but the patient's weight remained stationary. It was not until March, 1912, almost a year from the first symptom, that a goiter, exophthalmos, and tremor developed.

From the histories of these patients, it will readily be seen that the diagnosis is not an easy one, and that in a great many instances the practitioner must reserve his judgment for a time and await developments.

Kocher[2] has reported a sign which he considers very valuable in exophthalmic goiter, viz., the occurrence of a leucopenia with a reduction in the neutrophiles and increase in the lymphocytes. He refuses to operate in the absence of this sign.

Undoubtedly a great many cases, although fully developed, are overlooked. The writer has seen in the last three years two such cases. Usually the patients are considered as neurasthenics, but here as elsewhere such a diagnosis must be looked upon with suspicion and no patient must be condemned as merely nervous until all means of diagnosis are exhausted. It must not be forgotten that the disease is usually chronic, with acute exacerbations, and any patient presenting any one of the stigmata, even tremor with occasional attacks of palpitation on excitement, must be carefully watched for other signs of the disease. If the profession will think more of exophthalmic goiter and be more on the lookout for it, many cases will be diagnosticated and cured that are now doomed to hopeless invalidism and misery.

Once the diagnosis is made, what shall we do with these patients? A study of the literature on the treatment of Graves's disease must convince one of the efficacy of surgical treatment; yet there remains a large number of internists and even some surgeons who feel that medical treatment will cure if properly administered. The surgeons with almost complete unanimity plead for earlier diagnosis and earlier reference to the surgeon, claiming that patients too often are sent when moribund or in an inoperable condition. This undoubtedly is true, and it is due, in most instances, to deplorable ignorance on the part of the general practitioner. The diagnosis is made late, little treatment or improper treatment is given, and the patient is referred to the surgeon because of the gravity of the situation.

A perusal of the statistics of Kocher,[3 4] the Mayos,[5 6 7 8] Tinker,[9 10] Mumford,[11] Crile,[12 13] and many others shows that the mortality of the operation is about 3 per cent. Of the patients operated upon, 70 per cent. are cured, 15 per cent. are improved, and 10 per cent. are unimproved.[14]

The only medical statistics found are those given by Mumford for Jackson and Mead at the Massachusetts General Hospital, with the use of Forchheimer's[15] neutral hydrobromide of quinine, 5 grains three times a day. These observers divide their patients into two groups, those heard from by letter and those re-examined after two years. Of 29 heard from by letter, 20 were practically well, 7 unimproved, and 2 dead. Of 56 re-

examined patients 42 (or 75 per cent.) were cured, 7 were improved, and 6 were no better.

Rogers and Beebe,[16 17 18] also quoted by Mumford, in 1909 reported 480 cases treated by their serum. Fifteen per cent. were cured and 10 per cent. had no subjective symptoms, though retaining the goiter and occasionally the exophthalmos. Fifty per cent. were improved, 17 per cent. were unimproved, and 8 per cent. died.

The late Dr. Musser,[19] in a paper published since his death, expressed the opinion that too much surgical work was done in this condition. He felt that exophthalmic goiter was rarely dangerous to life and that the problem was to prevent invalidism and the misery consequent upon it. He urged clinicians to treat their patients more carefully with rest, diet, hydrotherapy, etc., and only to consent to surgical treatment when these measures have failed. It was his firm conviction that with more careful medical treatment few patients would require operation. S. Solis-Cohen[20] has expressed almost the same views. Most writers on the subject, both medical and surgical, feel that medical treatment should be given a thorough trial. In the opinion of the writer, this view is the only reasonable one.

For convenience, patients with exophthalmic goiter may be divided into three classes: (1) The mild; (2) the moderately severe, and (3) the severe. Cases of the first class present few symptoms—a slight struma or exophthalmos, with occasional attacks of tachycardia and palpitation, accompanied by tremor, and probably some of the nervous or psychic phenomena. In the second class are presented struma, exophthalmos, tremor, and more or less persistent tachycardia, combined with nervous phenomena and digestive and vasomotor disturbances. Patients of the third class exhibit struma, exophthalmos, tremor, persistent tachycardia and palpitation, emaciation, severe nervous phenomena, severe digestive disturbance, and sooner or later, weakened myocardium and the conditions incident thereto.

In treating these patients, the practitioner must have some more or less fixed program, and the following seems to the writer to be a sensible one:—

In Class 1 the patient should be treated very carefully by medical means and should be closely watched after apparent recovery. In this class the great majority will recover with medical treatment alone, but if they remain stationary, or fail to improve, they can be quickly turned over to the surgeon.

Class 2 patients should be told of both treatments, but wherever possible subjected to prolonged medical treatment. In this class, of course, it is necessary to keep the case under treatment for a long time, and some patients will not agree to this, preferring the surgical operation. Under these circumstances, after fully explaining the two treatments, the operation should be performed, followed by careful medical treatment.

In Class 3 surgical intervention cannot be attempted until the symptoms have been ameliorated by medical means. If the symptoms can be cured by medical measures, well and good, but if a condition short of cure is reached, and the operation can be safely recommended, it should be done.

Early diagnosis is the key to the situation in this as well as in many other disorders, and with earlier diagnosis more cures will be reported. It must be remembered that a do-nothing policy is apt to breed disaster, and these patients must not be allowed to go untreated until their disease has reached the last stage.

The temperament of patients must always be considered. The ultra-conservative will always wish to try non-surgical treatment, and the radical will often contemn the slow improvement resulting from medical treatment, but the practitioner must not allow himself to be swayed from his conviction as to the proper disposal of each patient.

In this connection a few words on the subject of the *medical treatment* of exophthalmic goiter will not be inappropriate. If the prevailing view as to the etiology of the disease is correct, surgical treatment is logical, for it removes the cause, viz., the overacting thyroid gland. Medical treatment at present is principally symptomatic. It aims to improve the nutrition, quiet the heart, and allay the nervous manifestations. The first essential is *rest*—rest of mind and body, rest in bed. The strictness with which this should be carried out varies in different cases. In some rest should be as absolute as in a case of typhoid fever; in others it should be as for an incipient case of tuberculosis. Each patient must be carefully studied and specially treated. No hard and fast rule for all cases can be applied. The discontinuance of rest must be very gradual and based upon the condition of the patient. Increase in weight, decrease of the pulse rate, and amelioration of the nervous phenomena are the criteria by which one may judge when to allow the patient to sit up and stand up. The erect position must be assumed and exercise permitted very cautiously, and the patient must proceed by easy stages. An essential part of the rest treatment is the correction of eye-strain and the removal, if possible, of worry or excitement. The treatment is usually best carried out in a sanatorium or hospital.

Food.—The diet should be plain, but highly nutritious, and must be suited to the individual. Meats in moderation, fresh vegetables, fruits; greens, such as celery, spinach, lettuce, etc., and very simple desserts are to be permitted. Highly seasoned food, condiments, pastry, candy, and rich salads must be denied. Milk and raw eggs must oftentimes be pushed, especially when appetite is lacking; large quantities should then be taken.

Fresh Air.—The patient is probably best treated, as in tuberculosis, in the fresh air; if this is not possible, the room should be thoroughly ventilated at all times.

Gastrointestinal Tract.—Toxins elaborated in the intestines exert a harmful influence and must be eliminated. The bowels should be kept active and the digestion in good working condition. Laxatives may be taken, if necessary, and an occasional brisk purge is beneficial. Nausea and vomiting have often to be treated.

Bathing.—The skin should be kept in good condition, and a cleansing bath given daily. This may often be advantageously followed by a hot and

cold douche to the spine; or, a very hot bath followed by a very cold one may be given.

Massage.—Light general massage may often be administered with advantage. It takes the place of exercise and rests the body.

Remedies.—General nervousness, insomnia, and palpitation are the symptoms which annoy these patients most. For the first two, bromides in large doses are usually effective. They have sometimes to be given in doses of 60 or 80 grains a day. Trional, sulphonal, veronal, and other soporifics become necessary in most instances. The palpitation is usually best treated by the ice-bag or the ice-water coil.

As for specific medication, many preparations have been suggested, among which may be mentioned thyroidectin, the milk of thyroidless goats, thymus extract, neutral hydrobromide of quinine, and Beebe's serum. Neutral hydrobromide of quinine in 5-grain doses four or five times a day has been very strongly recommended by Forchheimer, and in a personal communication he stated that he had used it in a great many cases with unvarying success and that many of his friends had also used it successfully. The statistics of Jackson and Mead, already quoted, speak well for this treatment. My experience with the drug, though limited, has been very satisfactory. With the other specific substances I have had no experience, except in the case of Beebe's serum, and that was used only in one patient. While the result was unsuccessful, a single case does not permit of condemning a treatment.

In conclusion, it may be stated that the essentials in dealing with exophthalmic goiter are early diagnosis, the avoidance of a do-nothing policy, and the early institution of earnest medical treatment. As in tuberculosis, one must have a large heart and a large thumb. Sympathy and tact, combined with firmness, are the keys to successful treatment. If medical treatment, promptly and vigorously carried out, does not succeed, the advice of a surgeon should be sought.

BIBLIOGRAPHY.

1. Schultz: Mitteilungen aus der Grenzgebiete der Med. und Chirurgie, xvi, Nu. 2, 1906.
2. Kocher: Archiv für klinische Chirurgie, xcvi, Nu. 2, pp. 253-555.
3. Kocher: Correspondenzblatt für schweizer Aerzte, March 1, 1910, Nu. 7, pp. 177-208.
4. Kocher: Archiv für klinische Chirurgie, lxxix, Nu. 3.
5. Mayo: Journal of the American Medical Association, Jan. 26, 1907.
6. Mayo: Surgery, Gynecology, and Obstetrics, June, 1909.
7. Mayo: *Ibid.*, March, 1909.
8. Mayo: Journal of the American Medical Association, p. 2174, Dec. 17, 1910.
9. Tinker: Long Island Medical Journal, April, 1908.
10. Tinker: Journal of the American Medical Association, Sept. 2, 1911.
11. Mumford: Boston Medical and Surgical Journal, June, 1910.
12. Crile: Journal of the American Medical Association, June 27, 1908.
13. Crile: *Ibid.*, March 4, 1911.
14. Baruch: Beiträge zur klinische Chirurgie, lxxv, Nu. 1-2, pp. 1-473.

15. Forchheimer: "The Prophylaxis and Treatment of Internal Diseases."
16. Rogers and Beebe: Journal of the American Medical Association, Sept. 1, 1906.
17. Beebe: *Ibid.*, Oct. 5, 1907.
18. Rogers and Beebe: Archives of Internal Medicine, Nov., 1908.
19. Musser: American Journal of the Medical Sciences, June, 1912.
20. Solis-Cohen: *Ibid.*, July, 1912.

A RESEARCH ON THE HOMO- AND HETERO- STIMULANT PROPERTIES OF CERTAIN LIPOIDS FROM THE TESTICLE, THYROID, ADRENALS, PITUITARY, AND BLOOD.*

By HENRI ISCOVESCO, M.D.,

PARIS, FRANCE.

Testicle.—The author obtained a lipoid from the testicle—analogous to one previously obtained from the ovary—which excites growth of the testes. To 20 large rabbits, of about the same age and weight, he gave in a period of sixty days 45 subcutaneous injections of a 2 per cent. solution of this lipoid in oil. These animals gained in weight 25 to 35 per cent. during the two months, while 5 control animals of like age and weight gained only 7 to 10 per cent. Upon sacrificing the rabbits, the treated animals showed normal weight and size of all the organs with the exception of the testes, the weight of which ranged from 7.45 to 9.9 Gm., while in the controls the weight of these organs was 1.9 to 3.6 Gm.

Clinical trial of this lipoid in the daily dose of 0.02 Gm. (⅓ grain) for thirty days in 11 patients suffering from hypochondria, or neurasthenia with sexual weakness, and in 8 aged men, resulted in increased general vigor, a better mental attitude, and improved capacity for work. In 4 of the 8 old men the blood-pressure was lowered. Vesical tenesmus, due to prostatic hypertrophy, in 3 of the cases, disappeared completely and permanently after an injection of 0.15 Gm. (2½ grains) of the lipoid. No toxic effects were noted from the large doses, either in these patients or in the animals.

Thyroid.—Differing from the above lipoid, which the author regards as "homostimulant," another lipoid, both homo- and hetero- stimulant, was obtained in the form of a pulverulent, waxy, yellow mass, rich in phosphorus, and soluble in ether and alcohol, from sheep's thyroid. This lipoid rapidly becomes altered under the influence of heat and light, assuming a darker color and becoming insoluble in ether. Injected into a rabbit in the dose of 0.01 Gm. per kilo., this lipoid induces in a few minutes tachycardia, dyspnea, intense redness of the ears, and exophthalmos. These manifestations disappear fifteen to twenty minutes after the injection. To 6 rabbits 0.02 Gm. of the lipoid were given in oily solution every day for two months. Sacrificed at this time, the animals presented protrusion of the eyeballs,

* Summary of article in the Bulletins et mémoires de la Société médicale des Hôpitaux de Paris, December 26, 1912.

enlarged lachrymal glands (3.26 to 4.26 Gm., as against 1.95 to 2.5 Gm. in controls), and hypertrophy of the heart, thyroid, and adrenals. The heart in the treated animals always exceeded 15 Gm. in weight, while that of the controls weighed between 8 and 10 Gm. The weight of the thyroid and adrenals was more than doubled. There was also a distinct hypertrophy of the female reproductive organs, though this was less marked than that which had previously been obtained from an ovarian lipoid.

Clinical trial showed that the thyroid lipoid possessed the same therapeutic properties as the whole thyroid and can be advantageously substituted for it.

Adrenals.—A lipoid was obtained from the adrenals which caused hypertrophy both of the adrenals themselves and of the heart, the enlargement of the latter organ being, however, less pronounced than that caused by the thyroid lipoid. The adrenal lipoid also possesses a remarkable property of greatly hindering puerperal involution of the uterus, acting as though it were an antagonist to the corpus luteum. Two months after labor the uterus of a treated animal weighed 16 Gm.; that of a control, 4.6 Gm.

Pituitary.—The author isolated from the pituitary a lipoid having the property of arresting growth, in the sense that rabbits weighing 3 kilos. lost 6 to 7 per cent. of the weight when treated with the lipoid for two months. It exerts, furthermore, a stimulating influence on the pituitary itself, doubles the weight of the adrenals, generally increases that of the kidneys (25 to 38 Gm. in treated animals, as against 19 to 20 Gm. in controls), and seems to have an inhibitory effect on the male generative organs, the testes being generally diminished in size. Changes in the hair and skin were also noted, daily injections of 0.01 Gm. per kilo. causing, in two months, deterioration of the hair, numerous eschars, and skin lesions, such as had not been observed with any other lipoid.

Blood.—The author had previously shown that (1) the erythrocyte has an independent existence in the blood, appropriating to its use material found preformed in the serum or building it up—*e.g.*, hemoglobin—from the various substances taken in; (2) the erythrocyte acts like a monocellular ductless gland; (3) of the internal secretions of the red cells, that of lipoids is among the most important, and it is the liberation of these substances from worn-out red cells which brings into activity the hematopoietic organs and excites the other erythrocytes to form hemoglobin. He now reports a study of the various lipoids of red cells and of the hematopoietic rôle of pure hemoglobin (extracted with ether) and nucleoproteids. It was found that hemoglobin, nucleoproteids, and all but one lipoid were devoid of specific hematopoietic property. The one lipoid exerted a marked influence on the blood of animals rendered anemic by bleeding. Whereas in the control animals blood regeneration took a month or more, in the treated animals the period was reduced to ten or fifteen days. The reason a hemolytic anemia is recovered from more rapidly than a posthemorrhagic anemia is that in the first event the hematopoietic lipoid remains in the blood and excites the blood-forming organs, while in the hemorrhagic anemia the

lipoid has been lost from the body with the red cells. The rabbits treated with the erythrocytic lipoid all showed a pronounced hypertrophy of the adrenals, suggesting that in blood regeneration these organs, excited by the lipoid, play an important part.

Clinically, this lipoid was tried in cases of chlorosis, and, given in conjunction with an ovarian lipoid, it yielded benefit more rapid and marked than had ever been observed by the author before with other methods of treatment. In hemorrhage secondary to uterine fibromyoma and in cases of hematemesis and hemoptysis, exceedingly prompt blood regeneration likewise resulted from the administration of the erythrocytic lipoid.

A NEW VASOCONSTRICTOR SUBSTANCE FROM THE BLOOD AND THE ADRENAL CORTEX.*

By CARL VOEGTLIN, Ph.D., and DAVID I. MACHT, M.D.,

BALTIMORE, MD.

In previous investigations the authors had found that extirpation of the liver, after anastomosing the vena cava and portal vein, was followed by symptoms much resembling those of poisoning by digitalis, viz., high blood-pressure, powerful cardiac stimulation, and often a final standstill of the heart in systole. They now report having isolated the substance responsible for this action from normal mammalian blood. Defibrinated blood or serum of oxen and pigs was dehydrated with sodium phosphate or sulphate, the dry mass pulverized and extracted with chloroform, the resulting extract evaporated to dryness, and the residue treated with absolute methyl alcohol. On evaporation, a white crystalline substance was obtained, very sparingly soluble in water, but freely soluble in organic solvents, which proved to be a powerful vasoconstricting agent, $\frac{1}{300}$ mg. producing a marked and long-lasting (over an hour) constriction of the vessels of a frog's hind legs and of the rabbit's ear. On the frog's, terrapin's, and toad's heart very small quantities exhibited an action similar to that of the digitalis bodies. At first there is a marked increase in the force of contraction of both auricle and ventricle. The volume output and the tonicity of the heart-muscle are augmented. The rate is slowed. Stronger solutions produce irregularity of beat, marked slowing, and a tendency to systolic standstill. The stimulating effect was even more strikingly noticeable in hearts injured or in poor condition at the beginning of the experiment. By exactly the same method, a similar substance was extracted from human blood-serum. It was found that a quantity of extract corresponding to 1 c.c. of human serum, diluted with 500 c.c. of Locke's solution, was sufficient to produce a very marked constriction of the rabbit's blood-vessels, showing that the substance must be

* Summary of article in the Journal of the American Medical Association, December 13, 1913.

present in quite an appreciable amount in normal blood. The substance was also obtained from blood-plasma (citrate and fluoride) and from red blood-cells.

That this substance is epinephrin is absolutely excluded by its method of preparation, its entirely different solubility, and its different, though similar, pharmacologic action—a much longer lasting vasoconstriction and very powerful cardiac stimulation. Neither is it identical with betaiminazolyl-ethylamine, recently isolated by Barger and Dale from the intestinal wall. Observations so far made on the body seem to point to its relation to the lipoid cholesterin, on the one hand, and to the cortex of the adrenal gland, on the other.

Mindful of the large content of cholesterin esters present in the adrenal cortex, the authors were led to examine this structure for the presence of substances similar to the one studied. Fresh adrenals of oxen were carefully freed from superficial fat and connective tissue, the cortex carefully dissected and separated from the medulla; the tissue ground up, desiccated with sodium phosphate, and treated with water-free chloroform; the chloroform extract evaporated, and the residue taken up in absolute methyl alcohol. After repeated recrystallization white platelets with a fatty luster and a melting point of about 50° C. (122° F.) were obtained. None of the physiologic properties of the substance were changed by boiling with weak alkalies, this excluding absolutely the possibility of its being epinephrin, which, as is well known, is not a product of the cortex, but of the medulla. The solubilities and pharmacologic action of the adrenal cortex extract were identical with those of the substance obtained from blood-serum. Furthermore, the adrenal-cortex extract and the blood-serum extract exhibited a similar toxic action when injected subcutaneously or intraperitoneally into mice.

USE OF PITUITARY EXTRACT IN OBSTETRICS.*

By J. CLIFTON EDGAR, M.D.,

NEW YORK, N. Y.

After experience in 70 cases, the author states that pituitary ampoules or vaporoles should alone be employed, as results are inconstant when the pituitary extract in bulk is used. For decided action, 0.4 Gm. of the drug is usually called for, although in ordinary cases, with little obstruction, half that dose was found sufficient. As the effect of the drug lasts but thirty minutes, repetition of the dose is often called for. Intramuscular injection is usually satisfactory, causing no local reaction or pain. Further, no toxic symptoms were observed from the use of the drug even in maximum doses.

Pituitary extract may be combined with ergot when the action of the former fails, and with heart stimulants in shock cases, without compromising

* Summary of article in the American Journal of Obstetrics, July, 1913.

the actions of these drugs. The extract has no place in normal labor. Its administration should be confined in obstetrics to instances of primary and secondary inertia, to post-partum hemorrhage and Cesarean section,—in the last as a substitute for ergot. The drug produces strong intermittent uterine contractions, often prolonged for several minutes. The author has never observed true continuous tetanic uterine contractions (tetanus uteri); but although theoretically the uterine contractions are intermittent, practically in the face of resistance they approach to the continuous in character and clinically must be so reckoned with. Full and even small doses of the drug in the first stage of labor have caused among the author's cases fatal compression of the fetus, premature separation of the placenta, and deep rupture of the cervix.

In the first stage of labor, or where decided obstruction exists in the second stage, the author gives small tentative doses of pituitary extract, not with complete delivery by means of the drug in view, but to bring the head in easy reach of a simple forceps operation. Seven cases were thus treated. The extract acted promptly and efficiently in most of 39 cases of inertia in the first and second stages. Its action was more positive in multiparæ than in primiparæ. It acted better at full term than in premature cases; also better in the second than the first stage of labor when administered shortly after the spontaneous artificial rupture of the membranes. In the 19 cases in which the drug was used immediately after the third stage for post-partum hemorrhage due to inertia, the results were disappointing,—so much so that the author considers its action here most unreliable and not as positive as that of the ergot preparations. In these post-partum cases there was no effect of the drug in 2 cases; it was necessary to use ergot in 2 instances; a hot acetic acid douche in 2 more; to pack the uterus in 7 cases, and only in the remaining 6 cases were good uterine contractions observed. In Cesarean section the author could not observe any advantage of pituitary extract over ergot, aside from the observation that the former acted more promptly and hence need not be administered so early in the operation. In induction of labor the drug failed to initiate contractions alone, but apparently initiated them after the use of gauze, the bougie, or the hydrostatic bag. He believes the drug strengthens already existing contractions not yet apparent to the patient or physician. For primary inertia in abortion cases the results with the drug were disappointing.

In atony of the bowel and bladder and as a galactogogue the results were frankly negative.

The dangers to mother and child in the indiscriminate administration of this drug for primary or secondary inertia of the first or second stages of labor must be reckoned with. Only a few of the 39 cases of inertia were frankly in the first stage of labor, and these were the earlier cases. The remainder were in the second stage, or border-line cases just merging into the second stage. The use of the drug in the first stage is a dangerous practice, liable to cause death or deep asphyxia of the fetus, separation of the placenta, uncalled-for laceration of the cervix, and

possible uterine rupture. In the 39 cases of inertia in the first and second stages, there were 2, and probably 4, stillbirths due, in the author's opinion, to the use of pituitary extract before full dilatation, and 3 instances of deep laceration of the cervix requiring suture to control the bleeding. The author looks upon the use of pituitary extract before full dilatation or dilatability of the cervix as equivalent to the use of ergot at this time. In fact, it is probably more harmful than ergot, by reason of the more powerful contractions produced and the uncertainty of its action. He repeatedly observed prolonged tempestuous contractions when the drug was given in the face of too much resistance.

The action of the drug is most uncertain. One can never predict in a given case, either from the amount of the drug administered, or from the character of inertia and the obstruction to be overcome, how powerfully the drug will act on the uterus. The author has repeatedly observed, both in private and hospital practice, 0.2 Gm. of pituitary extract—one-half the dose commonly employed—produce such prolonged and powerful uterine contractions that uterine rupture was imminent and anesthesia was required to control the action of the drug. The drug should never be employed for inertia in any stage of labor unless anesthesia is at hand for immediate use and preparations complete for immediate operative delivery, if necessary, to avoid uterine rupture.

With due regard to its action and possible dangers, pituitary extract is a most valuable addition to our resources for the treatment of primary and secondary inertia.

EXPERIMENTAL HYPERTROPHY OF THE THYROID GLAND, AND THE EFFECT OF EXCISION OF THIS ORGAN UPON OTHER DUCTLESS GLANDS.*

By WILLIAM STEWART HALSTED, M.D.,

BALTIMORE, MD.

Twenty-five years ago, the author was surprised to find that excisions or transplantations or simple manipulations of the thyroid lobe were, after a time and almost invariably, followed by increase in the size of the remaining portions of the gland, wherever situated. Examination of the hypertrophied tissue revealed the most unexpected and astonishing histologic picture, which, with few exceptions, made its appearance within twenty-two days after operation of any kind upon the thyroid gland, and even in its most advanced type was observed so late as ninety-five days after operation. This hypertrophy has generally been regarded as compensatory. For some years the author has thought that the hyperplasia which followed excision of a portion of the gland might possibly be due to infection of the wound, and this seems corroborated by the results of recent numerous experiments on dogs, in

* Summary of article in the American Journal of the Medical Sciences, January, 1914.

which the strictest aseptic precautions were observed. In none of the thyroids thus far examined has there been the slightest evidence of hyperplasia. That, nevertheless, there is such a thing as true compensatory hyperplasia of the thyroid gland is proved by the fact that when both thyroid lobes and the four parathyroid glandules have been removed and only a film of thyroid transplanted with one parathyroid body, this film hypertrophies enormously, and microscopically displays extreme hyperplasia. Yet the author was surprised to find from this year's experiments that so much as one and one-half lobes may be removed without appreciable effect upon the remainder of the gland. In most of the experiments the skin was disinfected with iodine, but in numerous instances it was not. Formerly the dogs were fed chiefly on raw meat, but during the past year their food consisted almost exclusively of corn bread and cooked lungs of beeves. From the observations of Marine, Reid Hunt, Watson, and others it seems not unlikely that in the diet may be found the solution of the problem. Should it be found that, as a rule, three-fourths or more of the entire gland must be removed before hyperplasia develops, this will strengthen the belief that the thyroid gland is normally in a state of relative inactivity, and that it is an organ with great reserve power, capable of responding promptly, almost instantly, to certain stimuli.

Great difficulties attend explanation of effects upon ductless glands other than the one surgically attacked. In hypertrophy or enlargement of the hypophysis, for example, described by many authors as following thyroidectomy, the formation of colloid has been interpreted by several as signifying a taking on by the hypophysis of the function of the thyroid, the colloid in the former replacing this substance lost in consequence of the thyroidectomy. But when experimental hyperplasia of the thyroid takes place, the colloid, instead of being increased in the remaining hypertrophied lobe, is diminished or disappears altogether; and this being the case, it would seem strange that, after thyroidectomy, it should appear in compensating fashion in the pituitary gland. To the author it appears unlikely that the colloid in the hypophysis which it is assumed makes its appearance in response to thyroid deficiency should signify hyperactivity of that organ, when the same colloid in the thyroid is found in abundance only in the comparatively inactive period of this gland. Is it not more probable that the elimination of the function of the thyroid may lessen, directly or indirectly, the demands on other of the ductless glands, and that the colloid changes noted in the hypophysis and parathyroids after thyroidectomy may signify hypo- and not hyper- activity of these organs? A recent contribution by Kummer concerns a woman, completely deprived of the cervical thyroids and parathyroids, who was kept alive for two years. The autopsy showed in the hypophysis changes apparently identical with those described in the hypophysis of one of Halsted's dogs fifteen months after the removal of both thyroid lobes and of the four parathyroids. This dog, kept alive for this long period by a parathyroid autograft only 14 mm. in diameter, died of tetany on the removal of the transplant.

The author has never observed hypertrophy of the transplanted parathyroids even when total thyroidectomy and total parathyroidectomy have been done. He is not quite willing to accept as proved the observations of others who claim that after thyroid lobectomy the parathyroids are stimulated to compensatory hypertrophy, forming follicles containing colloid. Why should the excision of an amount of thyroid insufficient to bring about thyroid hyperplasia cause compensatory hyperplasia of the parathyroid glandules? And, granted that changes may have occurred in the glandules after thyroid lobectomy, should these consist in the formation of a colloid equivalent to the colloid of the thyroid alveolus if the thyroid-colloid disappears in cases of definite privation and if the accumulation of colloid seems to signify a state of normal or hypo- rather than of hyper- activity? He has never observed hypertrophy of a transplanted parathyroid gland. The tendency of these grafts, in his experience, is always to atrophy. An enormous amount of experimentation must be done before these questions, which are in no sense remote, can be answered. Hypertrophy of the thymus gland has frequently been observed in Graves's disease; and from observations during the past ten or eleven years of a considerable number of such cases in which the greater part of both thyroid lobes has been removed, the author thinks there is reason to believe that the thymus atrophies in consequence of the operation upon the thyroid. The lymphocytosis gradually disappears, and in none of the earlier cases recently examined has the thymus been skiagraphically visible. It would seem, therefore, that the thymus may be activated by the thyroid.

THE FUNCTIONS OF THE PINEAL GLAND *

By CHARLES L. DANA, M.D., and WILLIAM N. BERKELEY, M.D.,
NEW YORK, N. Y.,
WITH THE COLLABORATION OF
H. H. GODDARD, Ph.D., and WALTER S. CORNELL, M.D.,
VINELAND, N. J.

The pineal gland in man has become distinctly a glandular organ with secreting cells and probably a few nerve-fibers. It tends to undergo deterioration at about the seventh or eighth year, but up to that time it may be supposed to have some function. Experiments on this organ were carried out by the authors as follows: (1) The nucleoproteids and the entire gland extracts were obtained and injected into the veins to test the effect on the blood-pressure; (2) they were also injected into young animals—rabbits, guinea-pigs—for a long time to determine the effect on nutrition; (3) the whole gland was fed to young animals; (4) the whole gland was fed to

* Summary of article in the Medical Record, May 10, 1913.

defective and retarded children. Only the glands of young bullocks were used. As a result of their experiences the authors are strongly of the opinion that in the early period of life the pineal has an influence over bodily nutrition, including the development of the genital organs, the deposit of subcutaneous fat, general growth, and mental progress. The extract of the pineal gland of bullocks injected into the veins of dogs had no effect on the blood-pressure. The same extract fed to babies caused an increase in metabolic activity, as evinced by an increase in the nitrogen eliminated in the urine. The authors report a case of tumor of the pineal gland which seems to show that in adult life entire destruction of the pineal gland does not affect metabolism. One of the authors succeeded in exposing and destroying the pineal gland in young guinea-pigs. One of the animals survived the operation for two weeks in excellent health, when he died, apparently from a small abscess. Excepting a failure to grow as fast as the control in the same cage, he showed no evident disability of any kind.

Feeding Experiments in Animals.—1. Of 8 half-grown guinea-pigs, well fed, under observation for five weeks, 4 received intraperitoneal injections, three times a week, of pineal nucleoproteid, and 4 were kept as controls. The controls gained 25 per cent. in weight; the subjects gained 36 per cent. The difference was perceptible to the eye, and the subjects could be picked out by persons not knowing which had been injected. 2. Of 12 small kittens, 6 were fed on calf's pineal, and 6 kept as controls. The subjects outgrew the controls rapidly in activity, size, intelligence, and resistance to intercurrent disease. The medication for the subjects was fresh gland—one calf's gland apiece per day, or 30 minims of a standardized solution of nucleoproteid in the milk. 3. Of 12 baby guinea-pigs, laboratory-bred, 6 were fed for four months on pineal capsules and 6 kept as controls. The subjects increased in weight (average of 5 surviving) 325 per cent.; the controls increased in weight (average of 4 surviving) 250 per cent. 4. Ten small rabbits were under observation for five months. The 5 subjects were fed on "capsules." One died. The 4 survivors gained, on an average, 1442.5 Gm. per rabbit, while the 3 surviving controls showed an average gain of 1074 Gm.

Therapeutic Experiments in Human Beings.—After various unsatisfactory methods of dosage, a physiologic dose was adopted, the attempt being made to estimate the actual work that one gland could do instead of its mere weight. The method was as follows: Twelve bullocks' pineals, perfectly fresh, are rubbed up with a suitable amount of milk-sugar till extinguished. The mass thus obtained, after thorough drying, is distributed into one hundred capsules. Each corresponds to 150 pounds of live bullock. From the total of about 50 children treated with the pineal preparation the authors conclude that in certain cases of retarded development in children, pineal gland may be a remedy of value. In cases of total idiocy and gross physical defect, however, they found the gland useless. In proportion as the patient was less characterized by physical stigmata, so much more benefit did he seem to reap from pineal medication. Whether there be any specific mental defect of childhood which may be called *apinealism* or *hypopinealism*

remains for the future to decide. There is, however, no question that the gland is of benefit in many cases of simple retardation, and even in such specific diseases as Mongolism. In one series of children the *physical advance* was more marked in the control cases than in the subjects—while the subjects advanced considerably more rapidly than the controls in mental accomplishment. It seems natural to suppose that given the existence in each subject of only a certain *quantum* of energy, the more this is deflected to mental lines of development, the less will be left for physical growth.

As a group, 21 subjects gained 2.23 points *mentally*. Of the 14 who gained, the average mental gain was 3.35 points. The 14 controls gained as a group only 1.35 points mentally. Of the 9 who gained, the average mental gain was 2.11 points. *Physically,* the gain in the standing height for the 21 subjects averaged 18.52 mm.; for the 14 controls, 24 mm. In weight the 21 subjects gained an average of 2.06 kg.; the 14 controls, 2.89 kg. In grip of the right hand the 21 subjects gained an average of 0.9 kg. as a group, and the 12 who gained averaged 1.58 kg. each. The 14 controls gained an average of 3.43 kg., the 10 who gained averaging 4.8 kg. each.

HYPOPITUITARISM, WITH REPORT OF A CASE.*

By T. J. BILLION, M.D.,

SIOUX FALLS, S. D.

A FUNCTIONAL classification is inadequate fully to describe the clinical conditions in pituitary disease. Cushing, in his monograph, classifies the states of "dyspituitarism" under five clinical groups: (1) Cases in which not only the signs indicating distortion of the neighboring structures, but also the symptoms betraying the effects of altered glandular activity, are outspoken. (2) Cases in which the neighborhood manifestations are pronounced, but the glandular symptoms are absent or inconspicuous. (3) Cases in which neighborhood manifestations are absent or inconspicuous, though glandular symptoms are pronounced and unmistakable. (4) Cases in which obvious distant cerebral lesions are accompanied by symptomatic indications of secondary pituitary involvement. (5) Cases with a polyglandular syndrome, in which the functional disturbances on the part of the hypophysis are merely one, and not a predominating, feature of a general involvement of the ductless glands. Cases in the first four groups vary, depending on whether symptoms of a hyperpituitarism, a hypopituitarism, or a mixture of the two predominate.

The case which the author describes is one of hypopituitarism of the third group. The patient is aged 25, married, and a Hollander. She is subject to recurring attacks of quinsy. She menstruated regularly until 21, when she

* Summary of article in the Journal-Lancet, November 15, 1913.

became irregular; she has not menstruated in the past two years since coming to this country. This is also the duration of her married life, and during this time she has had no sexual desire or feeling. Dizziness is the only subjective

Patient at 18 years. In good health.

Patient at 23 years. Note the acquired mandibular prognathism.

symptom. She now weighs 170 pounds, is 5 feet 4 inches high, and has become very fleshy in the last five years. There is now mandibular prognathism. The skin is thickened, dry, and inelastic. Hair is very scanty about the genitals

Patient's hand. Note the tufted phalanges, the exostoses, and the altered epiphyseal junctions; also the square hand and stubby fingers.

and under the arms. Temperature, 97° F. Blood-pressure, 100 mm.; sugar tolerance, 300 Gm.,—all the patient's stomach would tolerate. There is also an undoubted reversion sexually. The hand is that of an acromegalic, with the tufted phalangeal tips and exostoses, the short, thick, stubby fingers, and square hand. There was probably a hyperpituitarism after the age of 18; this shortly after reversed its functional character. The visual field in this patient is normal, and there is no evidence of other neighborhood symptoms. Under pituitary extract, 3 grains a day, the dizziness soon disappeared.

SURGICAL TREATMENT OF HYPERTHYROIDISM.*

By CHARLES NOOTNAGEL, M.D.,

MINNEAPOLIS, MINN.

In order to minimize hemorrhage during the excision of part of the thyroid gland, the author first ligates the superior and then the inferior thyroid arteries in the following manner: After dislocating the gland from its bed, he elevates the apex of the gland on his index finger, locates the superior thyroid artery by palpation, passes a curved round needle, armed with a ligature, around the apex, and ties the vessels and gland *en masse*. Then he introduces the index finger under the outer lower edge of the gland, turns this over as far as possible, locates the primary branches of the inferior thyroid artery by palpation or sight, passes a curved round needle, armed with a ligature, deeply through the thyroid gland from one side of these primary branches to the other, and ligates vessels and gland tissue *en masse*. This avoids the recurrent laryngeal nerve absolutely, insures an almost bloodless excision, and permits of leaving in the posterior third of the gland with its all-important parathyroids.

In order to insure a good cosmetic result, the platysma, fat, and fascia are united carefully by a running suture introduced in the following manner: A round curved needle with ligature is passed through these tissues as usual and tied, and then the needle is carried from below these tissues up to the skin, emerging just at its edge. Next the needle is again carried to the bottom of the wound on the opposite side, going up through the tissues and emerging again at edge of skin. This is repeated until the entire wound is closed. Then the skin is sewed by a continuous overcast stitch, two layers of gauze applied over the entire incision and saturated with collodion, and a thick gauze dressing applied while the collodion is still fluid. The above stitch holds the superficial tissues in better and closer apposition and relieves the strain on the skin suture. The collodion acts as a splint and holds the edges of the skin absolutely quiescent during the time of healing. Ten days after operation the dressing should be removed.

* Summary of article in the Journal-Lancet, August 1, 1913.

Iodized catgut is used throughout the operation. Drainage through a stab-wound should be used after every excision for hyperthyroidism. The edges of the fibroid capsule should be brought together by a running suture over the raw glandular surface except at its very lowest point, where the drainage-tube should enter. Where the drainage-tube emerges from the skin a separate dressing should be applied, so that it can be changed at any time when it becomes saturated with wound secretion without disturbing the dressing over the original incision.

The author purposely omits reference to excision of part of one lobe and tying of the other superior thyroid artery as the operation of choice, because when one whole diseased gland is left, hyperplastic growth may continue in this more easily than would be the case if part of it had also been removed. The additional time consumed in excising part of the second gland after tying its superior artery would be so short as to become negligible.

Abstracts from Current Literature on the Internal Secretions

Glycosuria and the Ductless Glands.—*Pancreatic Glycosuria:* The author refers to the case of a woman admitted to a hospital three years before for diabetes, who returned with all the signs of obstruction of the common bile-duct and the pancreatic duct. As she was 60 years of age, he suspected new growth of the head of the pancreas, but under treatment the obstruction disappeared, though the glycosuria persisted. This and similar cases suggest that diabetes may have a pancreatic origin even though there be no evidence of disease of the gland at the time the glycosuria is observed. Systematic use of the tests for pancreatic insufficiency will in future permit of recognizing more of such cases.

Adrenal Glycosuria: Injections of epinephrin are known to excite glycosuria. Von Noorden regards the chromaffin system as antagonistic to the pancreas in regard to sugar metabolism, and this antagonism has been used by Loewi as a test for pancreatic disease. Normally the instillation of a few drops of epinephrin solution into the conjunctival sac does not dilate the pupil, but if there is pancreatic inadequacy it does so in about twenty minutes, the normal balance between the internal secretions of the pancreas and adrenals being disturbed. This may also prove a help in determining whether or not a given case of diabetes is of pancreatic origin. The author finds the chief drawback to the test, that it is too sensitive. The pancreas may be only secondarily involved, and yet the test be positive. Thus in obstructive jaundice he found the test positive, and concluded that the obstruction originated in the pan-

creas; but the post-mortem revealed primary new growth in the liver, while there was merely a secondary pancreatitis.

Chronic overaction of the adrenals may afford an explanation of the frequent association of glycosuria with high tension in men in later middle life, for both these conditions can be produced by excess of epinephrin.

Thyroid Glycosuria: Thyroid extract can excite glycosuria. Myxedema is associated with increased sugar tolerance, while in Graves's disease sugar tolerance is lowered, and there may be actual glycosuria. Hence the myxedematous patient becomes stout, while the sufferer from exophthalmic goiter emaciates. But even in myxedema the administration of thyroid extract may cause glycosuria. Garrod found it in 4 out of 11 cases. The proper dose of thyroid extract in myxedema is one which does not lower sugar tolerance appreciably below the normal. The drug is not suitable for the treatment of obesity, as it may convert a latent into an active glycosuria; many stout subjects are on the verge of glycosuria. According to von Noorden, the internal secretion of the pancreas is inhibited by the thyroid; hence the glycosuria which follows thyroid excess.

Pituitary Glycosuria: In the active stage of acromegaly there is always lowered sugar tolerance, and frank glycosuria has been found in more than one-third of the cases. But with the progress of the disease the posterior lobe is destroyed, and the sugar tolerance rises, while the blood-pressure falls as less pressor substances are produced. In the earlier stages Humphry and Dixon have found pressor bodies in the urine. The development of the exaggerated sugar tolerance may be delayed by the compensatory enlargement of the thyroid which not infrequently occurs. The greatly increased sugar tolerance is one factor in inducing the obesity in Fröhlich's syndrome or primary hypopituitarism. Cushing and others advise the administration of pituitary extracts in Fröhlich's syndrome, and suggest that the appropriate dose can be determined by seeing what amount is necessary to reduce sugar tolerance to its normal level. W. Langdon Brown (Clinical Journal, October 1, 1913).

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Physiologic Properties of Lipoids Obtained from the Adrenals.—The author extracted from the cortical portion of the adrenals a lipoid insoluble in acetone, soluble with difficulty in benzol, partially soluble in alcohol, and soluble in chloroform, alcohol-ether mixture, and petroleum ether. Experimentally, this lipoid was found to excite, strongly, the adrenal cortex and, slightly, the kidneys and liver. It is devoid of action on the heart, but has a very distinct exciting action on the pilous system. When the substance was injected subcutaneously in oily solution into man in doses of 0.02 to 0.05 Gm. (⅓ to ⅘ grain), three changes were noted: 1. Increase in the pulse rate from 70 to 90 or more in the two or three hours following the injection, with simultaneous fall in blood-pressure. These two phenomena are parallel, and disappear in a few hours. 2. In 60 per cent. of instances, profuse sweating, lasting several

hours, sometimes a whole day, and especially pronounced at night. 3. Where the drug is injected in a daily dose of only 0.01 to 0.02 Gm. (⅙ to ⅓ grain), increased physical vigor and a sensation of well-being. H. Iscovesco (Société de Biologie, Paris, December 6, 1913; Semaine médicale, December 17, 1913).

The same observer extracted from the medullary portion of the adrenals a lipoid which, injected for about sixty days into rabbits, exerted a pronounced exciting effect on the heart, which became hypertrophied as a result. The substance also stimulates the medulla of the adrenals. Injected into man in daily doses of 0.02 to 0.03 Gm. (⅓ to ½ grain) it causes slowing of the heart rate, increased blood-pressure, and augmented capacity for work. The properties of this lipoid, differing from those of that previously described and obtained from the adrenal cortex, lead the author to suggest that in Addison's disease the asthenia and cardiovascular disturbances are due to destructive lesions of the medullary portions of the adrenals, and that the pigmentation and cutaneous changes are due to irritation, primary or secondary, of the cortices of these glands. H. Iscovesco (Société de Biologie, Paris, December 13 and 20, 1913; Semaine médicale, January 7, 1914). [*Cf.* with summary of article by Voegtlin and Macht, in this issue. Ed.]

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Pituitary Medication.—The good effects of pituitary extract usually seen during the first few days of its use are lost if the administration be prolonged, and likewise often cease with its discontinuance.

Infundibulin stimulates the unstriped muscle of the dilator iridis, and also that of the bladder, uterus, gall-bladder, and intestine. Experimentally, pituitary extract causes hyperadrenalism; in very large doses, hypothyroidism and thyroid atrophy. It also excites the secretion of the pituitary itself. It overcomes the tetany that follows parathyroidectomy. Castration in both sexes causes pituitary hypertrophy; so also does extirpation of the adrenals.

Therapeutically, pituitary extract has usually done good in increasing the force of the heart muscle, raising arterial tension, provoking diuresis, and improving the appetite. It has proved beneficial in the hyperthyroidism of pregnancy, menstruation, and the menopause, and in the tachycardia and tremor of Graves's disease. Given with extract of ovary or testis and thyroid, it has sometimes proven useful in genital insufficiency and myxedema as well as in hypoadrenalism. It is contraindicated in hyperadrenalism and high arterial tension. It relieves some symptoms of paralysis agitans, but not its rigidity. Combined with ovarian extract, it was useful in 2 cases of myasthenia gravis. It has, occasionally, diminished the aprosexia of adenoids, even without operation.

The author gives in adults a daily dose of 0.1 to 0.3 or 0.5 Gm. (1½ to 7½ grains) of the dried whole gland extract of ox, calf, or pig, or 0.1 to 0.4 Gm. (1½ to 6 grains) of the infundibular extract; to a child, ⅓ or ¼ of the adult dose is given, according to age. He gives cachets

of 0.1 Gm. each, preferably during meals. For obstetric use, he injects 1 to 4 c.c. (15 to 60 minims) into the glutei muscles. Thaon advises avoidance of pituitary extract if the kidneys be not normal, and Cushing states that the extract contains a depressor substance as well as a pressor, but Rénon and Delille, and others who have used pituitary extract extensively, have never seen any bad results from it. The author has found it useful during convalescence from acute infectious diseases. Lagane (Presse médicale; Charlotte Medical Journal, November, 1913).

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Paralysis Agitans and the Ductless Glands.—Parkinson's disease, the author points out, has been witnessed in association with myxedema, exophthalmic goiter, and scleroderma. Pathologic changes in the thyroid, parathyroids, and pituitary have been detected in this disease, and administration of preparations of these organs at times yields benefit in the same disorder. Paralysis agitans may thus be looked upon as a dystrophy of the internal secretions the result of endogenous intoxication, which, in turn, must react on some particular region of the nervous centers. On the whole, the symptomatology of the disease resolves itself into a single disturbance, viz., exaggerated muscular tone. Since physiologists now locate the center presiding over muscular tonicity in the subthalamic region, at the *locus niger* of Sömmering, and at autopsies in cases of Parkinson's disease circumscribed lesions, such as cysts, tuberculomas, and tumors, have been found in this very situation, the author is inclined to accept the view that the endointoxication of paralysis agitans exerts its effects here, just as that of exophthalmic goiter, he says, acts on the restiform bodies. As to the manner in which the intoxication affects the nervous structures, the author points out that thyroparathyroid insufficiency causes loss of calcium from the organism and its deficient assimilation. Calcium is known to be a sedative to the nervous and muscular systems, and there results therefore from the decalcification in paralysis agitans nervous excitation, whence naturally follows increased muscular tone. Studies of the urine in cases of Parkinson's disease by the author, as well as observation of various clinical manifestations, especially those referable to the bones and joints, confirmed the existence of decalcification in this affection. The treatment indicated, therefore, includes both thyroparathyroid organotherapy, and recalcification by the administration of calcium chloride. In cases reported by the author excellent results were thus procured. J. Gauthier (Thèse de Lyon, 1913; Gazette médicale de Nantes, December 20, 1913).

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Physiologic Action of Pituitary Extract.—The authors report experimental work in dogs. An extract of the posterior lobe, pituitrin, was used. Intravenous injection of this preparation causes a moderate rise in blood-pressure, slowing of the pulse rate, and a temporary arrest of the urinary excretion, without true secondary polyuria. The rise in

blood-pressure is more marked when the normal tonic activity of the vagi has been suspended or the terminations of this nerve paralyzed. It is due to a visceral and peripheral vasoconstriction, which appears to occur independently of the general vasomotor center. The slowing of the pulse rate caused by pituitrin ceases when the vagi are cut or their terminations paralyzed with atropine; conversely the tachycardia brought on by either of these procedures disappears under the influence of the pituitary preparation. Pituitrin weakens and slows the isolated heart.

The diminution of urinary excretion produced by pituitrin is dependent upon a renal vasoconstriction which seems to be of peripheral origin. Theocin sodium acetate acts in the dog in a manner opposite to pituitrin. It accelerates the heart rate, does not raise the blood-pressure, and causes renal vasodilatation with copious diuresis

In the entire animal the action of epinephrin is exerted in the same direction as that of pituitrin, but is more powerful and also more evanescent. It differs from pituitrin in increasing the amplitude of and accelerating the contractions of the isolated heart; it contracts the vessels and suspends urinary secretion in the isolated kidney. L. Beco and L. L. Plumier (Bulletin de l'Académie royale de Médecine de Belgique, vol. xxvii, No. 5, 1913).

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Exophthalmic Goiter in Cases of Syphilis.—Among the numerous infections that may bring on symptoms of Basedow's disease, syphilis is one of the most important from the practical standpoint, in view of the favorable effects obtainable with specific treatment in such cases. Hischmann observed in Gaucher's clinic the case of a girl of 19 years, with syphilis of six months' standing, in whom, after treatment for secondary manifestations had been given, rather suddenly developed a swelling in the central and lower portions of the neck, especially on the right side. The swelling rapidly increased in size, and became both painful and tender. There was no exophthalmos, but slight tremor and tachycardia (120 per minute). The patient also complained of mild attacks of epistaxis, of frequent sensations of heat and profuse perspiration. Under the influence of injections of mercury benzoate and of potassium iodide, these phenomena almost completely disappeared.

As Gaucher and Lévy-Fränkel have shown, the Basedow syndrome may be observed in the secondary stage of syphilis, when it is frequently preceded by specific buccopharyngeal ulcerations. Its onset is generally insidious, the earliest sign being usually tachycardia, less often thyroid enlargement. Clinically, there is no means of distinguishing it from exophthalmic goiter dependent on any other cause, except the efficacious action of mercury and iodide, which constitutes the sole argument in favor of its being essentially syphilitic in nature. Potassium iodide, indeed, often badly borne by Basedow cases, here exerts a favorable effect. G. Milian (Paris médical, September 20, 1913).

Surgical Treatment of Pituitary Disease.—From the operative standpoint the author divides enlargements of the hypophysis into three groups: (1) Intrasellar solid tumors; (2) solid tumors, intracranial in development, and (3) enlargements constituted by a single cyst. Before operation it is not possible to distinguish whether a cystic enlargement exists or not. One can ascertain with certainty, however, whether it is intrasellar or endocranial. The chiasm is separated from the hypophysis by a deep subarachnoid space, the cisterna of the chiasm. If the pituitary tumor grows so as to emerge above the sella turcica, it will fill up the cisterna and exert pressure upon the chiasm, whereas exclusively intrasellar tumors will cause no ocular disturbance. The author's operation for pituitary tumor involves submucous resection of the septum, the separation of tissue being extended to the intrasphenoidal septum; of 37 cases operated by this route, only 5 ended fatally. Some patients, almost blind at the time of operation, were able to resume their previous occupations; others with disturbed intellection and loss of memory were restored to a normal mental state by the intervention. The degree of benefit obtainable depends upon the nature and size of the tumor and upon the capacity of the optic nerves for repair after the period of compression. The most favorable prognosis is offered in intrasellar cysts of the pituitary. Hirsch (Proceedings of the Seventeenth International Medical Congress; Revue hebdomadaire de laryngologie, d'otologie, et de rhinologie, December 20, 1913).

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Effect of the Spleen and of Splenic Extract upon Malignant Growths.—The spleen is almost as efficient as the bone-marrow as a site of formation for antibodies, and agglutinins can be demonstrated in the spleen earlier than in the blood. Braunstein obtained good results by removing the spleen from mice with cancer and injecting an extract of the spleen in salt solution into other mice similarly affected. Six of the 15 mice injected died, but 5 of the remainder showed recession of the tumor. The spleen from mice repeatedly injected intraperitoneally with carcinoma and sarcoma extract was injected into 45 cancer-mice, with death in 3, recession of the growth in 6, and arrest of growth in 3. Of 7 sarcoma-rats similarly tested, 6 showed regression. Braunstein's conclusions were that the spleen possesses a highly developed power of resistance against tumor growth, while, on the contrary, splenectomized animals are more liable than normal animals to the inroads of malignant growth. Rohdenberg and Johnston made parallel observations upon the thymus, pancreas, spleen, hypophysis, and testes, showing that after extirpation of the thyroid, thymus, or testes the animal had a lessened resistance to carcinoma. The experiments of the authors support the views of Braunstein. They noted a comparatively more rapid growth of tumors in animals previously splenectomized. The results with splenic extract showed that it contained antibodies, while blood removed at the same time failed to show the same qualities.

Oser and Pribram (Zeitschrift für experimentelle Pathologie und Therapie, January, 1913).

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Danger Attending the Use of Epinephrin in Light Chloroform Anesthesia. — Levy, in experiments on cats under deep chloroform narcosis, had found that if a small dose of epinephrin hydrochloride solution is injected into a vein, there occurs a well-marked rise of blood-pressure, later followed by marked irregularity of the heart. If the same injection be made, however, into an animal under light chloroform anesthesia the resulting action is more intense, in fact almost invariably fatal, death being due to ventricular fibrillation. Levy had observed a similar action in man, the effects of epinephrin in a lightly chloroformed subject being acceleration of pulse with raised tension, then still greater frequency, with the pulse less readily felt and sometimes perceptibly irregular at the wrist. A few temporary pauses may be noted, and then the heart suddenly ceases beating; the pupils dilate widely, intense pallor supervenes, and cessation of respiration usually follows. In a few cases a fatal termination resulted.

The author of the present paper reports sudden death from stoppage of the heart as result of the injection of 5 minims of a 1:1000 solution of epinephrin in the nose of a patient who had been anesthetized with chloroform. At the time of the injection anesthesia was light, the corneal reflex being brisk, and no more chloroform was given. All attempts to resuscitate the heart failed. H. T. Depree (British Medical Journal, April 26, 1913).

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Adrenal Insufficiency and Susceptibility to Poisons.—The authors had shown that animals with adrenal insufficiency are more sensitive to intoxication by curare and strychnine than normal animals. In recent studies conducted for the purpose of finding out the reason for this difference they were led to conclude as follows: The large number of poisons that are more active in decapsulated animals indicates that the favorable influence of the adrenals is not exerted through specific neutralization by it of all these different substances. The difference between the lethal dose of a given poison in normal and in decapsulated animals is distinct, but not great; it would be more marked were there a specific process of neutralization in the normal animal. Moreover, adrenal extracts and epinephrin fail to neutralize or even diminish the toxicity of strychnine or curare, either *in vitro* or *in vivo*. In fact, a mixture of epinephrin and strychnine is more toxic than strychnine alone. The increased susceptibility of decapsulated animals to poisons is probably due to a general disturbance in the circulation, blood-pressure, vasomotor function, secretions, and elimination. Such conditions favor the absorption and fixation of poisons, and hinder their excretion. J. Camus and R. Porak (Société de Biologie, Paris, June 21, 1913; Médecine pratique, July, 1913).

Quinine in Exophthalmic Goiter.—Cases of Graves's disease improved by the administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided between twenty days in each month, are reported by the author. No untoward effects whatever were observed. In the absence of a specific remedy for exophthalmic goiter, the rôle of the sympathetic system in the production of the various manifestations of this disease, whether it be considered the *primum movens* in the condition or held to be altered secondarily—organically or functionally—through a modification in the thyroid secretion, is sufficiently important, in the author's estimation, to justify the institution of treatment intended to counteract its (the sympathetic) disturbance. While surgical treatment of the sympathetic seems to have yielded successful results in many cases, medical treatment directed to the same end and consisting in the administration of quinine salts seems worthy of trial in a large proportion of cases, in view of (1) its frequent efficacy; (2) its ease of application, and (3) the tolerance to this drug exhibited by patients with Graves's disease—a tolerance rather remarkable in cases that almost constantly present pronounced gastrointestinal disturbances. R. Gaultier (Société de Thérapeutique, Paris; Presse médicale, December 13, 1913).

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Thyroid and Testicular Treatment in a Case of Chronic Rheumatism and Psoriasis.—The author reports the case of a man of 72 in whom severe pruriginous psoriasis and mild chronic rheumatism had come on slowly in a period of seven or eight years after emotional distress, due to the loss of three children. The rheumatism was worst in winter; the psoriasis, in summer. The itching from the latter condition was continuous and prevented sleep. The circinate character of the lesions suggested the possibility of syphilis, but the Wassermann reaction was negative. Signs of hypothyroidism being present, the writer prescribed thyroid cachets, of 0.025 Gm. (⅔ grain) each, with rapid benefit to the rheumatism, but none to the psoriasis. As the patient showed breasts of a somewhat feminine type, with sexual frigidity of six years' duration, and also hypotrichosis, the writer, remembering that the testis is rich in sulphur (Brisson) and has a marked action on the skin, prescribed cachets of testicular powder—one of 0.2 Gm. (3 grains) daily—with rapid benefit to the itching and psoriasis, and return of sleep. Léopold-Lévi (Comptes-rendus de la Société de Biologie, June 6, 1913).

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Tumor of the Hypophysis.—Report of a case upon which was performed a frontal craniotomy for tumor of the hypophysis with threatened blindness. The patient was a man of 31 who had been treated for some eye trouble for two years, until it was recognized that he had a temporal hemianopsia. When the patient was admitted to a special institution, he had only slight light perception in the nasal side of the right eye, and complete temporal hemianopsia on the left side. With the X-rays the sella turcica was found much enlarged. The hypophysis was exposed

by the transfrontal route, as described by Frazier, and an excellent exposure of the sella turcica and contents obtained. The hypophysis was the site of a large tumor, of which a part was removed with a sharp spoon. Convalescence from the operation was uneventful. Improvement in the left eye was noticed by the patient on the day after the operation, and steadily continued. The last perimetric charts showed a marked increase in the field of the left eye for all colors. Elsberg (Medical Record, July 26, 1913).

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Uses of Ovarian Extract.—The author points out that in some forms of dysmenorrhea, a condition which he attributes to a mild degree of hyperthyroidism, ovarian extract is of great value. It was also found useful in lactation, atrophy of the uterus, and in the flushes of the climacteric period, natural or artificial, especially if administration is begun early. In anemias, including genuine chlorosis, it also served well. Combinations of iron, arsenic, and ovarian extract are particularly useful in such cases; wherever iron is indicated the author gives ovarian extract with it. In amenorrhea, relative or absolute, he has found ovarian preparations the best remedy. They produce no untoward results and the main contraindication consists of profuse bleeding. He often combines ovarian extract with thyroid, especially to promote metabolism and encourage oxidation. The annoying symptoms sometimes produced by thyroid are often greatly diminished by the addition of ovarian extract. S. Wyllis Bandler (Archives of Diagnosis, January, 1913).

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Treatment of Postoperative Retention of Urine.—Pituitary extract employed in 21 puerperal and 24 postoperative cases of retention of urine with excellent results. By its use the author was always able to avoid catheterization. The injections were given deeply into the muscles. It was found that they are best given when the bladder is fairly full, and the patient distinctly feels the necessity of having it emptied. Injection of pituitrin is then almost always followed in five to ten minutes by an increased desire to micturate, which usually ends in a spontaneous evacuation of the bladder. Occasionally, however, this result is not obtained until after a few hours. If an injection is given when the bladder is only about half-full, the action is less marked, though distinctly noticeable; if the bladder is empty, there is no effect whatever. When once a voluntary evacuation had been secured, it was seldom necessary to repeat the injection, viz., in only 8 out of 45 cases. Ebeler (Zeitschrift für gynäkologische Urologie, Bd. iv, S. 55, 1913).

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Acute Pneumococcic Suppurative Thymitis.—The author reports pathologic data concerning the thymus of a child that succumbed suddenly with asphyxic symptoms. The entire center of the organ was occupied by an abscess, which emptied itself as soon as it was entered. The pus contained pneumococci. The abscess walls showed, internally,

marked inflammation, with round-cell infiltration; externally, practically normal thymus tissue, without fibrosis or fatty degeneration. The condition can thus be considered one of insidiously developing acute thymitis with abscess formation. Demme has reported a similar case in a child 2½ months old who died in three hours, with signs of asphyxia; the autopsy showed total suppuration of the thymus without any ascertainable portal of entry of the infection. H. Audeoud (Revue médicale de la Suisse romande, December, 1913).

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Precocity in a Case of Pineal Tumor.—The author reports the case of an infant who, at the age of 4 months, developed, first, hydrocephalus with spastic paresis. The hydrocephalus soon ceased to increase, but the child remained backward mentally, whereas, physically, an abnormally rapid development took place. At 18 months the pubis became covered with hair, the genitals developed to an exaggerated extent, and the voice changed. This syndrome is characteristic of pineal tumors, as illustrated in the case reported by Raymond and Claude in which confirmation by autopsy was obtained. The X-ray examination in the author's case afforded ground for believing that a pineal tumor was actually present. Van der Heide (Dutch Pediatric Society, Groningen, July 17, 1913; Bulletin médical, August 6, 1913).

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Function of the Spleen in the Infection of Albino Mice with Bacillus Tuberculosis.—Infection of rats and mice with tuberculosis (bovine type) develops a splenic tumor as a typical lesion. Removal of the spleen from mice greatly increases their resistance to the infection. This increased resistance cannot be explained at present. The infection in the splenectomized mice tends to remain localized as contrasted with an almost septicemic type of disease which is usual in the normal animal. The animals of each group that live more than thirty days are apt to present typical exudative lesions. The removal of the spleen does not therefore grossly change what may be called the capacity of the body for exudation. P. A. Lewis and A. G. Margot (Journal of Experimental Medicine, February, 1914).

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The Sella Turcica in Some Epileptics.—The circulatory disorders in epilepsy, shown frequently in slow pulse, vasomotor stasis in the extremities, and an invariably low blood-pressure when arteriosclerosis is not advanced, the tendency to obesity, and a ravenous appetite, might make one pause before excluding the possibility that there may be some association between epilepsy and a marked disturbance of the pituitary body, and suggest that it might ultimately be found that pituitary disease may sometimes have more or less bearing on some types of epilepsy in some of its broader and more general manifestations. L. Pierce Clark and E. W. Caldwell (Journal of the American Medical Association, January 3, 1914).

Effects of Thymectomy in Chicks.—The author removed the thymus from chicks 4 or 5 days old. The chicks recovered readily from the operation when placed in the incubator for twenty-four to forty-eight hours and suitably fed. Three out of 6 operated chicks were living three months after the operation. The effects noted were a slightly more rapid increase in weight than in the controls, superficial trophic disturbances (dull plumage and comb), subnormal size of the testes, and a lessened resistance to intercurrent infections. In birds leaving the egg in a less advanced state of development than the chick, *e.g.*, the pigeon, possibly more marked disturbances, comparable with those resulting from thymectomy in puppies, might be observed. Coutière (Bulletin de l'Académie de Médecine, Paris, October 28, 1913).

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Epinephrin in Postanesthetic Vomiting.—When the vomitus in postoperative emesis is of the hemorrhagic type, the author administers by the mouth, in addition to carrying out other measures, 5 to 10 minims (0.3 to 0.6 c.c.) of a 1:1000 solution of epinephrin hydrochloride in a teaspoonful of water. The blood in the stomach is likely to have been the result of engorgement of the gastric vessels during the employment of the Trendelenburg position, the vessels subsequently rupturing under the stress of retching. In a series of cases, after washing out of the stomach contents with saline draughts, the passage of blood into the stomach was found to be arrested by the administration of epinephrin, and cessation of the vomiting promptly followed. Keay (Edinburgh Medical Journal; Charlotte Medical Journal, October, 1913).

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The Thyroid in Pregnancy.—The authors report a study of the thyroid in 1586 cases of pregnancy. Of 852 primiparæ, 83 showed thyroid enlargement, and of 734 multiparæ, 49. The general average was 8.3 per cent. In 8 cases varying degrees of hyperthyroidism were present; in 2 others it also probably existed in a mild degree. With but one exception the symptoms of hyperthyroidism practically disappeared within two weeks after delivery, and in the 1 case forming exception they were diminished, later becoming more severe with the beginning of another pregnancy. The earliest onset of these goiters varies considerably; a large proportion, however, had first appeared during pregnancy. None required surgical interference. J. W. Markoe and L. W. Wing (Bulletin of the Lying-in Hospital of New York, June, 1913).

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Pathology of the Adrenals.—The author reports a case in which a tumor found in an adrenal was the only noticeable explanation for sudden death after a minor operation. The patient, a woman of 43, had a tendency to cardiac hypertrophy, high blood-pressure and glycosuria, and the tumor found in the adrenal may have been the primary cause of them all. The excessive functioning of the adrenal entailed by the tumor growth, consisting of chromaffin tissue, flooded the organism with epi-

nephrin and this rendered the heart, etc., so unstable that it was unable to resist even the slight shock of a minor operation. Conditions are similar to those in the thymolymphatic habitus, in which sudden death may occur from slight causes. Helly (Münchener medizinische Wochenschrift, August 19, 1913).

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Conjoint Thyroid and Renal Disturbances.—Thyroid disorders are frequently accompanied by slight functional disturbances of the kidneys. In many cases the renal disorder is quite clearly manifest, giving rise to polyuria and a pronounced increase in blood-pressure. The prognosis is not rendered less favorable, however, by such an accompaniment. The disturbance in the renal secretory function is probably dependent on or favored by the toxic and nervous influences arising because of the disorder of internal secretion. Histories of 5 illustrative cases are given. Jamin (Deutsche Zeitschrift für Nervenheilkunde, Nos. 47-48, 1913; Zentralblatt für innere Medizin, January 10, 1914).

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Effect of Removal of Certain Ductless Glands on the Growth of Sarcoma.—In experiments on dogs in which sarcoma had been artificially induced, the author found that the maximum growth of the tumors occurred in animals subjected either to thyroidectomy or castration, removal of these glands apparently favoring the development of the tumors. Degeneration and absorption of the tumor, on the other hand, occurred early and were particularly marked in dogs that had been both castrated and thyroidectomized. V. G. Korentchevsky (Rousky Vratch, May 4, 1913).

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Action of Prostatic Extract on Cerebral and Renal Circulation.—The authors found that intravenous injections of prostatic extract produce regularly an increase of the volume of the brain as well as a fall of arterial pressure, with or without slowing of the heart rate. The volume of the kidneys was generally lowered simultaneously with the fall of arterial pressure. The observations were made by the plethysmographic method. C. Dubois and L. Boulet (Comptes-rendus de la Société de Biologie, April 25, 1913).

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Metabolic Results of Administration of Desiccated Thyroid to Dementia Precox Patients.—The administration of desiccated thyroid to 4 patients with dementia precox caused: (1) An increase in the output of total urinary nitrogen; (2) an increase in the output of creatinin; (3) an increase in the output of indol-acetic acid. E. L. Rose (Archives of Internal Medicine, December, 1913).

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Action of Epinephrin on the Coronary Vessels.—Report of experimental work on dogs and cats confirming the view that epinephrin dilates the coronary vessels and accelerates and increases the circulation through them. Meyer (Berliner klinische Wochenschrift, May 19, 1913).

Department on General Medicine

Original Articles

DILATATION OF THE STOMACH COMPLICATING PULMONARY TUBERCULOSIS: ITS SYMPTOMS, DIAGNOSIS, AND TREATMENT.

By FRANK NEALL ROBINSON, M.D.,

MONROVIA, CAL.

In obtaining a careful history in cases of pulmonary tuberculosis, it seems remarkable how many of the patients suffering from this disease complain of disturbances of digestion, varying in character, which have already existed for some time. The majority have been sufferers in this direction long before a diagnosis of the pulmonary affection had been made. Investigation of these symptoms is of such importance to the welfare of our patients that it behooves us all to examine with especial care the size and location, as well as the motor function, of the stomach in all cases of pulmonary tuberculosis coming under our supervision, and to watch carefully for the development of these symptoms, in those where no deviation is found, during the course of treatment. That dilatation with atony and loss of motility is the commonest variety of gastric disturbance to be met with in cases of pulmonary tuberculosis, those who will search carefully for it can easily convince themselves.

In a series of 265 cases of pulmonary tuberculosis under my care, I have found dilatation of the stomach to exist in 223 (85 per cent.); of these 223 cases, 134 (60 per cent.) gave a previous history, extending over several years, of symptoms referable to the stomach, such as belching and frequently recurring "bilious attacks," with vomiting, palpitation of the heart, and headache.

The number of males suffering from the affection was relatively as great as the number of females in whom the diagnosis could be made.

It is my firm belief that dilatation of the stomach plays an important rôle in the production of many symptoms seen in the tuberculous, and that its existence aggravates many more of the symptoms primarily of a tuberculous nature, by reason of the autointoxication taking place through the fermentation of the sugars and starches, or through the putrefaction of the meat, eggs, and milk, and no doubt as a result of both factors, operating simultaneously, in a large majority of cases. These conditions constitute an important agency in the increase in fever, and are also responsible for many of the secondary toxic symptoms, such as loss of appetite, extreme fatigability, nervousness, constipation, the marked matutinal depression complained of by many of these patients, as well as

albuminuria, headache, urticaria, and the thick, glutinous sputum occluding the bronchial tubes and provoking sibilant râles and harassing cough accompanied by vomiting. Many additional symptoms can easily be proved to depend on gastric dilatation by instituting the proper measures to overcome this condition, when most of the secondary symptoms will be seen to disappear and the remainder to become markedly lessened.

Etiology.—The causes of dilatation of the stomach are as numerous as those contributing to the pulmonary lesion. Some of the most important ones may be enumerated as follows: Irregular meals; leaving too short an interval between meals, and eating too much and too quickly. But the most important factor, to my mind, is a debility of the muscular wall of the stomach, which forms part of the general muscular debility of these patients. This is accompanied by degenerative changes in the gastric musculature, the result of fatty degeneration consecutive to inflammatory affections of the mucous membrane, these in turn being due to intemperance, alcoholic intoxication, and also to infectious diseases.

Symptoms.—The symptoms of this affection are so numerous and varied that for a proper understanding we must divide them into two classes: (1) Those referable directly to the digestive tract; (2) those purely toxic (from absorption).

Primary (digestive) Symptoms.—The appetite in these cases is either very good or entirely wanting, the patients complaining that they "can't get enough to eat," but feel badly after eating, or that "nothing looks good," and that it is simply the fact that they know they must eat that enables them to take food at all. There is no pain until from two to four hours after meals. These patients then become "puffed" and complain of pain in the epigastrium and around the umbilicus, this being accompanied either by belching gas, which may become fetid; or if the belching continues, by regurgitation of food, followed, in turn, by pyrosis, with a feeling of heaviness in the epigastrium. The bowels are for a long time constipated, but later the movements become soft, offensive, and acid in reaction. They are frequently expelled with pain, and large quantities of glairy mucus, yellow or white in color, are mixed with the feces in a majority of these cases.

Secondary (toxic) Symptoms.—Aches and pains (toxic myalgias and neuralgias), referred to the chest and right hypochondrium, are frequently complained of and often mistaken for attacks of pleurisy. One of the most distressing of the toxic symptoms with which one has to deal is the morning depression these patients suffer from, accompanied by headache and a feeling of anxiety, which remains with them for several hours. Insomnia frequently accompanies this disorder. The liver is invariably found enlarged in these cases, and the patients will complain of a feeling of weight or pain in the right hypochondrium. These patients also suffer from vertigo, especially on arising.

Reflex toxic symptoms involving the circulation, and referable to the skin, are frequent. Chief among these is a feeling of chilliness. When this appears it is often referred to by the patient as "fever coming on";

but when the temperature is taken, no rise is found. This symptom is seen generally about an hour after a meal.

Partial and fleeting edema of the face, hands, and feet, sometimes accompanied by itching, is observed. Flushing of the face, accompanied by a burning sensation, is a common symptom coming on from two to three hours after a meal and continuing for one-half to one hour. These patients are also subject to spells of perspiration, manifested more particularly about the neck, chest, and face, and coming on both at night and in the daytime, usually as soon as they fall asleep. Such patients are the ones who complain of catching cold easily.

Patients suffering from the gastric complications complain far more of dyspnea than do those presenting no symptoms in this direction. About 10 per cent. of my cases showed albuminuria, without other evidence of kidney complication. The albumin entirely disappeared when proper measures were instituted. It is in these cases of dilated stomach complicating pulmonary tuberculosis that one sees the so-called "tuberculous rheumatism" and painful joints. My histories show that 30 per cent. of the cases complained of painful joints.

Of the purely toxic nervous symptoms occurring in my cases, migraine, spinal irritation, and cerebrocardiac neuroses with hypochondriasis were the most frequent.

Diagnosis.—The physical procedures most useful in making a diagnosis of the affection are percussion and auscultation.

Percussion, as practised in endeavoring to outline the stomach, is a delicate manipulation, for one must be exceedingly careful to differentiate between the stomach tympany and that produced by the colon. To obviate this source of error, one should percuss from above downward, first determining the upper border of stomach tympany and marking it with a pencil, and then following that tympanitic note downward. The lower border can then usually be made out clearly. After the upper and lower limits of the stomach have been determined, the right and left border should be ascertained as well. These limits can be found by the same method of percussion, the right border being first determined and the same note then followed to its extreme limits on the left.

Auscultation, with the aim of eliciting a splashing sound, is of much greater importance than percussion, for the ear is thus brought into play, and by careful "clapotage" from above downward the lower border can be easily found and marked out. It is imperative that this sign be always looked for at least four to six hours after a meal; in fact, a fasting stomach—eight to ten hours after a meal—is best of all for this purpose. If splashing should not be heard on the first few strokes, one should not be misled into considering that the stomach is not dilated, for it may have become flattened out and lie behind the abdominal walls. If the patient is now required to drink a half-glassful of plain water, it will be found, if dilatation exists, that the splashing sound can immediately be elicited. It should not be forgotten that every stomach that is not retracted when it is empty is a dilated

stomach. Dilatation is not distention, but a *stretching* of the stomach, the cavity of which is apparent only when it is empty because, though its walls may touch each other, it is no longer capable of diminishing its own size by retraction.

If the true extent of the dilatation is to be ascertained, it is better then to inflate the stomach by having the patient drink a half-glassful of water in which has been dissolved a teaspoonful of sodium bicarbonate. After gentle massage of the region overlying the stomach, thoroughly to mix the soda solution with the stomach contents, the stomach area can be outlined once more by percussion before the few drops of hydrochloric acid are added. After the latter has been given, one should wait a few moments for the gas to form and inflate the stomach. Now the outline of the stomach should be made out while the patient is in the recumbent posture; then, the patient arising to his feet, the upper and lower border should be especially determined while he is in this position, for in this manner the full extent of the sagging of the organ can be shown.

Should one not be satisfied with the ordinary methods of diagnosis alone, recourse may be had to the bismuth meal and the X-ray, when a true, graphic picture of the extent of the displacement can be obtained.

Treatment.—The benefit afforded these patients by proper remedial measures is surprising. Not only are the digestive and toxic conditions removed, but the general condition soon responds to treatment, much improvement in the pulmonary tuberculous trouble becoming manifest. Sight should, of course, not be lost of the primary tuberculous affection, and tuberculin in some form—that best suited to the case—should be used, while at the same time treatment for the secondary (gastric) affection is being instituted.

Treatment of the dilated stomach as a complication of tuberculosis of the lungs consists of the use of mechanical, dietetic, medicinal, hydrotherapeutic, and hygienic measures. A combination of all these is necessary, one being as essential as the other, and the successful outcome of the treatment depends entirely on strict supervision by the physician and the hearty co-operation of the patient in carrying out the measures in detail.

Mechanical.—Support must be furnished to the stomach and to the flaccid abdominal wall, and my preference is to apply a Rose belt of Z O adhesive plaster or moleskin after so manipulating the organ as to raise it up. For this purpose I place the patient on his back, with the hips elevated on a firm, folded pillow. I never allow the straps to remain after they lose tension or become wrinkled, lest the skin be made sore, but remove them with benzine, wash the skin carefully with alcohol, and replace the straps, after carefully examining the position of the organ. As soon as the patient shows improvement I have a supporting belt made to fit him, and have him wear the belt night and day until there is a gain in weight, when I allow him to remove it at night, with the understanding that it is to be replaced in the morning before arising, while still in the recumbent position.

Dietetic.—Much depends on diet in the treatment of this affection, and, while the tuberculous condition must be taken into consideration, one must not forget that most depends, in this class of the tuberculous, on the careful nursing of a bad stomach for a favorable outcome of the pulmonary lesion. Secondary enteric infections must simultaneously be prevented, if possible. Several desiderata stand out prominently in this regard, and first among them, to my mind, is a dry diet, in the sense that no liquids are to be taken with meals or for two or two and one-half hours after. This is advisable for two reasons: (1) The increased bulk of stomach contents (for these patients are frequently drinking copiously of water with meals) by gravity helps to sag down the already dilated organ, as well as to decrease motility, which is already diminished in a large majority of instances; (2) there is superinduced a great reduction in the hydrochloric acid content which, in conjunction with the already impaired digestion, renders decompositions and fermentation much easier, with resulting formation of organic acids.

The feature of next importance in the treatment is to have at least ten hours between the heavy meals of the day. In this way the stomach is given opportunity to empty itself and then rest before another tax is thrown upon it. I order for the patient a good breakfast, make lunch a light meal, and then supply a good dinner at night. Another factor which I invariably insist on is absolute rest, and by this I mean lying down with an attempt to sleep (not lying down reading books, or talking), after each meal, for from one-half to one hour.

Alcoholic drinks of all kinds are interdicted in these cases, as they are badly borne, and aggravate both the gastric and pulmonary disorders. Neither is fresh bread allowed these patients, but stale bread, toast, or crust may be taken, as well as crackers made with hard dough. Fresh bread is a cause of considerable discomfort, owing to fermentation, in these cases, and I have found it necessary time and again, where I have attempted to allow the use of it, to order it discontinued on account of increased flatulence.

Medicinal.—The indications for medicinal treatment in these cases are twofold: (1) To supply to the stomach the necessary hydrochloric acid and pepsin to aid and hasten digestion; in fact, the hydrochloric acid must be added in sufficient quantities to prevent decomposition and fermentation; (2) to stimulate muscular tone and secretion, an indication met by the use of bitter stomachics, such as nux vomica, cinchona, quassia, etc.

The drugs answering these indications may be combined, and my favorite formula is:—

℞ *Tincturæ nucis vomicæ,*
Acidi hydrochlorici diluti .....āā f℥ss (15 c.c.).
Glyceriti pepsini ..... f℥iss (45 c.c.).
Aquæ menthæ piperitæ .....q. s. ad f℥iij (90 c.c.).
M. Sig.: One teaspoonful in a half-glassful of water after each meal.

This may be supplemented, if there is considerable flatulence, by the addition of chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until this symptom is overcome, when it should be discontinued from the prescription.

Hydrotherapeutic.—Cold shower or sponge baths to the entire body, with a needle bath to the abdomen, followed by a brisk rub with a Turkish towel until the skin reacts, the whole administered on arising in the morning, constitute a valuable adjunct, improving the tone of the entire body and thereby increasing functional activity in the organs.

In cases with enteric symptoms—mucous passages and flatus—I use Priessnitz compresses, made by ringing Turkish towels out in hot water. These are applied to the abdomen for a half-hour after meals, while the patient is resting. The hot towels are kept covered with a small blanket or piece of woolen material.

Hygienic.—Under this heading I refer in particular to alimentary hygiene, that is, to those measures ordered the patient which have as their objects the rapid digestion of food, and the prevention of the long delay of food in the stomach.

First among these is the thorough mastication of all the food. The patients must not alone chew it well, but must eat slowly. Another feature is total abstinence from worry during meals. Some patients have a habit of waiting until mealtime to do their fretting, and I invariably caution against fretting and worrying, especially during these periods.

No eating or drinking between meals is to be permitted, except as ordered. Raw egg may be allowed these cases between meals, when the stomach has shown sufficient recuperative power to handle them, but until this time nothing should be permitted during these intervals.

Orders must be given to avoid fats, particularly at first; later they may be allowed in sufficient quantity to supply the demands of the individual patient. There will be found some patients who, from habit or other causes, require more fat than the average, and these are the cases in which fats can be added to the diet earlier than would be advisable elsewhere.

Seldom does lavage have to be resorted to in these cases. Even where the occasion for it does appear to present, care should be taken to avoid it in cases with active pulmonary lesions and febrile temperature.

THE TREATMENT OF CONDITIONS EXHIBITING INDICANURIA.

By GUSTAV BAAR, M.D.,

PORTLAND, ORE.

Indicanuria signifies the abnormal excretion in the urine of potassium indoxyl sulphate (indican). According to Jaffe, one finds, physiologically, in the twenty-four-hour urine, from 4½ to 19½ mg. of indican. In these quantities this body can hardly be determined by the usual tests. Indican is derived from indol (C_8H_7N); the nucleus of the indol group, tryptophan, is contained in proteids and converted into indol through the agency of putrefactive processes. The indol absorbed from the intestinal tract is not excreted as such; it is first oxidized to indoxyl (C_8H_6NOH)

and then combined with sulphuric acid, when it appears in the urine as the potassium or glycuronic acid salt of indoxyl sulphate. Indican has been found not only in the urine, but also in pleuritic exudates, in the fluid of abdominal cysts, and, recently, in the sweat.

While in a large majority of cases indicanuria is due to the absorption of indol from the intestinal tract (*intestinal* indicanuria), it may also be due to the extraintestinal formation and absorption of indol, *e.g.,* in fetid bronchitis, cavernous pulmonary tuberculosis, gangrene, retention of a dead fetus, abscess, etc. This latter type has been designated as the septic, or *extraintestinal,* type of indicanuria. The existence of such a type must be admitted, and August Hartman, Alexander Kellman, and others have availed themselves of the indicanuria in such cases for diagnostic purposes.

The existence of a third type of indicanuria, *"metabolic* indicanuria," due to some fault in metabolism, we do not acknowledge, because the experiments in which subcutaneous injection of oxalic acid or phloridzin was found to produce indicanuria have not been verified.

Indicanuria is not a disease; it is merely a symptom, as we shall try to prove—a very valuable one, if properly interpreted.

By far the largest number of indicanuria cases belong to the first group, that of *intestinal* indicanuria. The indoxyl derivatives *per se* are non-toxic; 0.01 Gm. of indol per kilogram of weight of animal must be injected to produce any toxic effect, and such a quantity is never formed within the intestinal tract. But other products of nitrogenous putrefaction which are formed along with indol in the course of intestinal putrefaction are toxic —ptomaines, leucomaines, phenol, cresol, and skatol—and, inasmuch as we possess no simple method of determining these latter products, we judge what we heretofore thought to indicate the degree of intestinal putrefaction by the more simple method of the indican test. As will be shown later, indicanuria implies increased intestinal putrefaction only in a small number of cases.

Personally, I have employed the Obermeyer test: One test-tubeful of urine is precipitated with a few drops of a 20 per cent. aqueous solution of basic lead acetate solution. Half a test-tubeful of the clear filtrate is gently shaken with an equal amount of the freshly prepared Obermeyer reagent. The latter is obtained by mixing with 50 c.c. of *fuming* hydrochloric acid (C. P., Merck) 6 drops of tincture of ferric chloride. One cubic centimeter of chloroform is then added and the mixture gently shaken again for two minutes. The chloroform, dissolving the indican, sinks to the bottom of the tube and presents a distinctly blue, even blackish blue, coloration if indican be present in abnormal quantities. Using always a twenty-four-hour urine specimen and the same proportions of chemicals, and taking into account the specific gravity of the urine, we are enabled to get a fair idea of the quantity of indican by the shade of blue obtained.

In the last two decades it has been the habit of innumerable authors to consider indicanuria the expression of gastrointestinal autointoxication, and to explain diseases which in former years had been termed neurasthenia

as manifestations of such intoxication. The actual foundations for this entire doctrine of intestinal autointoxication have not risen above the level of an hypothesis, in spite of brilliant speculations in which, especially, the French school has indulged. Realizing, even from my modest knowledge of the history of medicine, that "theories," in spite of their apparently brilliant foundations, have had to be altered quite frequently, or even entirely abandoned, with the progress of science, while "empirical facts" have remained true ever since the time of Hippocrates, I started, seven years ago, by routine examination for indican in every one of my hospital, as well as my ambulant, cases to gather "empirical facts" in this direction. As space and theme do not permit of an enumeration of these facts, I must refer the reader to my monograph on the subject,[1] based on the study of 2092 cases, with over 40,000 indican tests and over 100 laparotomies corroborating the diagnosis. After convincing myself that *neither constipation, hyperchlorhydria, nor diet per se* had anything to do with indicanuria, I was enabled to divide my cases into three groups: I. Cases showing indican constantly in their urine (*constant* indicanuria). II. Cases showing indican only temporarily (*transitory* indicanuria). III. Cases showing indican only in association with the clinical recurrence of obscure gastrointestinal symptoms, and in which, with the abatement of such symptoms, the indican disappeared (*cyclic* or *recurrent* indicanuria); this type is the most frequent one.

I. The cases of *constant indicanuria* showed either (*a*) constant progressive organic lesions somewhere in the gastrointestinal tract—tuberculous peritonitis, carcinoma of the cardia, of the pylorus, of the liver, of the colon, stricture of the rectum, diffuse peritonitis, etc.; (*b*) constant achlorhydria, nervous achlorhydria, or pernicious anemia, or (*c*) the earmarks of a hypoplastic constitution (hypoplasia).

In former repeated examinations of the feces for indol, I ascertained the fact that there is no necessary relation between indicanuria and fecal indol, for we had frequent occasion to convince ourselves that the feces contained excessive indol, while the urine showed no indican, or that the feces contained indol only in moderate amount, while the urine showed excessive indican. This fact proves that it is not alone the quantity of nitrogenous putrefactive substances in the intestinal tract which causes indicanuria, and that there must be some other reason for the entrance of this material into the circulation besides its mere overproduction within the intestinal tract. The experiments of Herter and Wakeman, which proved that the fresh mucosa of the gastrointestinal tract, as well as liver cells, kidney cells, muscle, and brain, has the power of forming such a firm combination with indol that it cannot be recovered on distillation, were recalled. This suggested the idea that it must be some lesion of the gastrointestinal mucosa which allows even the normal indol to enter the portal vein and appear in the urine as indican; that as long as the mucosa, which constitutes the first line of

[1] "Die Indicanurie," Urban und Schwarzenberg, Vienna, Austria.

defense against the enterotoxins, is in normal condition, one should find no indicanuria, and that as soon as this first line of defense is broken through, or so to speak "begins to leak," one should find indicanuria though the feces might contain only very moderate amounts of indol. In a practically experimental manner, I proved this in cases of gastroenteroanastomosis, appendectomy, enteroanastomosis, cholecystectomy, cholecystostomy, gastroanastomosis,—all of which showed indican in the urine from the first day of the operation up to the time when it could be assumed that the intestinal wall was healed. In abdominal, and especially in pelvic, operations in which adhesions had to be separated or the intestines extensively handled, the mechanical trauma was sufficient to produce indicanuria. Similar operations, in which, however, there had been little or no trauma to the bowel wall, did not give rise to it. In other words, *every lesion of the gastrointestinal mucosa,* of whatever nature, produced indicanuria: Simple lesions of the gastrointestinal mucosa are sufficient to cause absorption of the ever-present indol and subsequent indicanuria. This assumption is corroborated by the numerous reports of other authors who have found indicanuria present in the conditions already mentioned.

The indican excretion in these cases does not always imply increased nitrogenous putrefaction, for, once the first line of defense is broken, indican will appear in the urine even though only moderate amounts of indol may be present in the intestinal tract; these small quantities are absorbed by a *healthy* mucous membrane without causing any indicanuria, whereas in the presence of a lesion of the mucous lining they will enter the circulation and cause indicanuria.

While studying the cases showing no hydrochloric acid at all in their stomach-contents—the achlorhydria cases—I found that all, without exception, had a constant indicanuria. As soon, however, as irrigations of the stomach with a 1 : 1000 solution of silver nitrate brought about the temporary reappearance of hydrochloric acid in the gastric juice, the indicanuria disappeared temporarily. These cases were under observation for several years, as our case-reports in the monograph already referred to show; none of them ever developed an organic lesion of the gastrointestinal tract. Hence, one could hardly hold any lesion of the mucosa accountable for this type of constant indicanuria; nor could one assume that the absence of hydrochloric acid *per se* would cause indicanuria, as we had proved before that acid had no bactericidal influence beyond the limits of the stomach.

Tentatively, I would like to suggest the following explanation for this type of constant indicanuria: From the experiments of Bayliss and Starling we know that the normal hydrochloric acid of the stomach, as it enters the duodenum, forms secretin from prosecretin, which is contained in the cells of the duodenal mucosa. This secretin, according to Enriquez and Hallion, enters the circulation and stimulates the pancreas to secrete. The pancreatic secretion, in its turn, causes secretion of the succus entericus; this contains enterokinase, originating from the duodenal glands, and erepsin, originating lower down in the intestines; these two ferments, on their part,

activate trypsinogen (contained in the pancreatic secretion) to trypsin, whereupon the pancreatic secretion becomes proteolytic. If, then, as in the cases of achlorhydria, there is no hydrochloric acid, there will be no secretin formed in the duodenal mucosa and, consequently, there will be no pancreatic secretion brought into the intestinal tract and no secretion of succus entericus. In other words, the normal proteolysis is disturbed and the ever-present bacteria have an opportunity to form putrefactive products out of the undigested proteids; hence, one will find indicanuria as an expression of their excessive formation.

Objection might be made to this explanation on the ground that previously I made the statement that there is no necessary relation between intestinal indol and indicanuria. To this I reply that the *abnormally* functionating intestinal lining of the achlorhydria cases has lost its indol-binding properties, so that the indol formed in the intestines can easily break through this first line of defense and appear as indican in the urine, which it might not have been able to do if the lining had not lost its toxicolytic properties. A *normally* functionating intestinal mucosa will prevent the absorption of even large quantities of indol, as we had occasion to observe in the cases of excessive fecal indol without simultaneous indicanuria. This theory, moreover, is borne out by the success of the treatment applied in these cases: Stomach lavage with nitrate of silver solution (1:1000), hydrochloric acid and pepsin per os (acidolpepsin tablets), and high colonic lavage with a 1 per cent. aqueous ichthyol solution. The cases of nervous achlorhydria gained in strength as well as in weight—in one instance 40 pounds—on this treatment.

In the same group of cases of constant indicanuria belongs also a case of pernicious anemia in a man 72 years of age which I mentioned in my paper read before the meeting of the American Medical Association, November 5, 1910, in St. Louis. This patient, who presented the classic microscopic picture of pernicious anemia (megaloblasts, poikilocytosis, 30 per cent. hemoglobin), gained, in the course of six weeks of this treatment with high colonic irrigations of 1 per cent. ichthyol solution, up to 70 per cent. hemoglobin (Sahli); megaloblasts, poikilocytes, and indicanuria entirely disappeared. The consensus of opinion as to the etiology of pernicious anemia seems to be pointing today toward an atrophic catarrh of the stomach, thus corroborating my claim that achlorhydria is responsible for this class of constant indicanuria cases.

In this group, again, belongs the case of an hypoplastic woman who was under my care for years with the diagnosis of "depressive neurasthenia," until repeated examinations for indican in the urine revealed a constant indicanuria. With the institution of high colonic lavage the whole clinical picture changed, and the woman, who for years had conveyed the impression of a classical case of depressive neurasthenia, showed a most remarkable and complete change in her disposition within a week. The indican, which I had found constantly during the previous months, had now disappeared from the urine.

Altogether, there were about 32 cases among the 2092 studied which thus showed no lesion whatever of the gastrointestinal tract, but did show constant indicanuria. In quite a number of these cases high colonic lavage overcame the indicanuria, and with it disappeared the symptoms of so-called "intestinal autointoxication," as Combe and others of the French school especially have described them—pale face, dry skin, cold feet and hands, dizziness, headache, sleeplessness, nervous depression, neuralgia, migrating rheumatic pains, fetor of the breath, acne, seborrhea, furunculosis, and urticaria. A few of these cases are reported in detail in my monograph. A considerable number presented the stigmata of hypoplasia described by Bartels: Excessive irritability of the vasomotor system (erythema pudicitiæ, dermographism); excessive flexibility of the metacarpophalangeal joints; large tonsils; high, narrow, and hard palate; uvula bifida; heterologous sexual characteristics, manifested, in the case of women, in the masculine type of hair growth, lanugo on the cheeks and upper lip, long hairs in the axilla, hairy upper arms and thighs, extension of the hair on the mons veneris to the linea alba instead of being horizontally limited, perineum hairy, pelvis masculine, lower extremities of masculine length, hypoplastic mammæ, and strongly developed lower jaw; or, in men, shown in the feminine type,—scanty hair growth on the face, breast, and mons veneris; cubitus valgus, etc.

If these cases show so pronounced a type of hypoplasia, why should we not assume that there exists at the same time a hypoplastic condition of the secretory glands and the mucous lining of the gastrointestinal tract, *i.e.*, an insufficiency of secretion of hydrochloric acid, pancreatic juice, bile, and succus entericus? Such an insufficiency must needs produce an insufficient amylo- and proteo- lysis, whereby a considerable portion of the food will enter the colon undigested and here fall a prey to the ever-present putrefactive bacteria. Thus will occur the formation of large quantities of indol, which will easily penetrate the mucous lining, since the latter has lost its toxicolytic properties. The fact, moreover, that this indicanuria, which is *constant,* can be removed *temporarily* though not permanently by colonic lavage, supports my theory. I was able to remove the putrefactive products from the colon mechanically, but could not overcome the insufficiency of the digestive secretions, which betrays a constitutional anomaly, viz., hypoplasia.

As to the treatment of these (hypoplastic) constant indicanuria cases, I may add that the radium waters at St. Joachimsthal, Bohemia, containing 600 units of radium (M. E.) per liter, seem to operate beneficially on account of their activating influence upon the ferments of the body as well as because of their bactericidal effects upon *Bacillus prodigiosus.*

If one considers that these cases constitute only 1½ per cent. of all the cases studied, whereas the diagnosis of neurasthenia is certainly made oftener by the general practitioner than in only 1½ per cent. of all cases coming under his observation, it is evident that *the neurasthenia symptom-complex is only occasionally caused by intestinal autointoxication.*

In connection with this secretory insufficiency, I wish to call attention

to the original and important experiments of Pawlow demonstrating the influence of the *psyche* upon the quality and quantity of gastric secretion. We need not be surprised, in view of his results, that diseases, such as epilepsy, chorea, or nervous (bronchial) asthma, which include in their symptomatology disturbed innervation of the secretory glands, should show indicanuria, and that the removal of this indicanuria by means of high lavage has no influence whatever upon the disease itself. Thus, *while indicanuria constitutes one of the most constant symptoms of epilepsy and other neuroses, we cannot attribute to it any etiologic importance.*

II. The cases of *transitory indicanuria* are due either to *transitory organic* lesions of the gastrointestinal mucosa, as in the temporary indicanuria of measles and other exanthemata, and in acute gastroenteritis, or to *transitory secretory insufficiency* (psychic). As a rule, they do not require any treatment.

III. The *recurrent* or *cyclic* form of *indicanuria* constitutes the most frequent type. In the course of my studies on hyperchlorhydria the fact became evident to me that all cases exhibiting symptoms of gall-bladder or appendiceal trouble, or of ulcer of the stomach or duodenum, always showed indican in the urine with the recurrence of these symptoms, whereas with their disappearance the indican likewise disappeared from the urine. Having previously found that every lesion of the gastrointestinal mucosa, of whatever nature, produced indicanuria, I utilized this type of cyclic indicanuria for the differential diagnosis of obscure cases that came under my observation with indefinite gastrointestinal symptoms. With due consideration of all other clinical symptoms, I was thus enabled, in many instances, to make a positive diagnosis of a "surgical" disease where the condition had for years been taken for "nervous dyspepsia," "gastritis," "neuralgia," etc. Many such cases were thus diagnosed early and came under the surgeon's care at the earliest possible stage, as may be seen from the histories given in detail in my monograph. Many a case of recurrent surgical gall-bladder trouble—cholelithiasis—could be diagnosed long before the appearance of the typical gall-bladder colic, and operated upon before pancreatitis, pericholecystitis, empyema of the gall-bladder, etc., became established, thus reducing the mortality of the operation. Many a case of chronic ulcer was operated upon early enough to avoid the development of carcinoma upon an ulcer basis. Many a case of chronic appendicitis, moreover, was thus recognized. After the removal of the cause of this type of indicanuria by cholecystostomy, gastroenterostomy, appendectomy, etc., the indicanuria itself disappeared, thus proving the correctness of my assumption.

In conclusion, I wish to point out the practical results of my studies. Instead of merely guessing at the diagnosis in those cases which come under our observation with indefinite gastrointestinal symptoms, we should (1) regularly test the twenty-four-hour urine for indican, for a period of at least two months (one single test has no value), and thus determine the type of indicanuria present; (2) ascertain if there is achlorhydria; (3) institute high colonic lavage. The latter will remove the *recurrent* type of

indicanuria only when the lesion is located in the colon; if the lesion be higher up, it will have no influence whatever. The recurrent indicanuria in these cases is quite often the only positive evidence at hand of gastro-intestinal lesions requiring surgical interference.

In cases of *mucous colitis,* indicanuria will prove of differential diagnostic value in affording a distinction between *nervous* mucous colitis and the *symptomatic* variety of this affection, recurrent indicanuria being present where the mucous colitis has been merely a symptom of gall-bladder disease, appendicitis, or ulcer, while the true nervous mucous colitis shows no indicanuria.

In cases of *diarrhea* one is enabled positively to state whether the disease is due to mere nervous hypermotility of the intestines, or to organic lesions, by simply following the indican excretion.

In cases of *hyperacidity* coexisting recurrent indicanuria points to a reflex hyperacidity caused by surgical lesions, such as ulcer, cholelithiasis, and appendicitis, while its absence suggests a merely nervous or toxic (*e.g.,* nicotine) origin of the hyperacidity.

In short, indicanuria *per se* only rarely calls for any treatment, but constitutes, according to its type, a most valuable sign in the diagnosis of various diseases of the gastrointestinal tract.

Cyclopedia of Current General Literature

Acidosis in Surgery.—Because of a marked reduction in the normal alkalinity of the blood, many of the patients requiring surgical operations are unfit subjects for general anesthesia and the ordeal of an operation. The warning signs in such cases are: 1. A history of unaccountable headaches, vertigo, attacks of dyspnea, occasional nausea or vomiting, an unreasonable dread of the operation, tachycardia, and other nervous symptoms. 2. A peculiar, sweetish odor to the breath, suggesting the odor of rotten apples. In some cases this is marked and unmistakable. 3. The presence in the urine of the acetone bodies.

To disregard these warning signs is to subject the patient to one of two undesirable conditions: (1) An anesthesia requiring large amounts of ether or chloroform, and attended with struggling and great rigidity of the muscles, difficult breathing, a rapid pulse and nausea, followed by a prolonged and nerve-racking convalescence with persistent vomiting, restlessness, dyspnea, a rise in temperature, and much suffering; (2) if less fortunate, to a fatal termination, preceded by nausea, air-hunger, persistent vomiting, a rise in temperature, and great nervousness, followed by coma and death in from ten hours to two or three days. A recognition of the acidosis in time, followed by the institution of such measures as a carbohydrate diet of, say, from 6 to 8 ounces (180 to 240 Gm.) of oatmeal

and cream with lactose, large quantities of carbonated alkaline water, colon flushings with an alkaline solution, and the internal administration daily of 3 to 4 drams (12 or 16 Gm.) of sodium bicarbonate or sodium citrate by mouth, will be followed by a rapid disappearance of all or most of the unfavorable symptoms, and the patient will be rendered, for the time being at least, a safe subject for the anesthesia and the operation. W. B. Russ (Journal of the American Medical Association, November 1, 1913).

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Acute Poisoning by Coffee.—While chronic intoxication through excessive use of coffee is a common condition, cases of acute poisoning, such as that described by the author, are extremely rare. The patient was a woman 46 years of age who, her menstrual flow not having yet appeared sixteen days after the expected time, ingested as a remedy an infusion of 250 Gm. (8⅓ ounces) of coffee in 200 Gm. (6⅔ ounces) of water. Half an hour later there appeared a prickling sensation in the skin, which was followed by nausea, cramps, and fainting spells. The latter became more and more frequent, and the patient experienced vertigo so pronounced that she could no longer keep her eyes open. Five hours after the taking of the coffee there was extreme pallor, slight cyanosis, and coldness of the extremities. The pulse rate was 44. The drug had been taken at 9 A.M., and no urine was passed until the following morning. At this time there was no albuminuria. There were violent pains in the epigastrium, the tongue was dry and pasty, and no bowel movement had taken place during the twenty-four hours. After this a gradual improvement took place. On the following day the condition was normal, and on the same evening menstruation began.

The treatment applied in this case consisted of active rubbing of the limbs and the administration of iced Vichy water, with a heaping teaspoonful of sodium bicarbonate added to each glassful. The amount of caffeine ingested must have been between 2.5 and 5 Gm. (38 and 76 grains). The maximum permissible dose of this alkaloid is 2 Gm. (30 grains) in the twenty-four hours, divided into four doses. In this case the whole amount had been taken at once. Ten grams (150 grains) of coffee suffice in the preparation of a single cupful and the dose taken in this case was therefore equivalent to 25 cupfuls. Sterne (Revue médicale de l'Est; Lyon médical, December 21, 1913).

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Anesthesia, Anoci Association in.—Through selection and combination of anesthetics the author aims to attain an anesthesia that will exclude all stimuli from the brain. His illustrative description of the technique adopted in abdominal operations is as follows: 1. Excluding the very young, the aged, and patients with depressed vitality, he first administers, as an average, ⅙ grain of morphine and $\frac{1}{150}$ grain of scopolamine one hour before operation. 2. If local anesthesia alone is employed novocaine in 1:400 solution is used by progressive local infiltration. 3. If inhalation anesthesia is employed he administers nitrous oxide, either alone or with ether added as required. 4. As soon as the patient is uncon-

scious, first the skin and then the subcutaneous tissue is infiltrated with 1:400 novocaine. In order to spread the novocaine, local pressure is at once applied with the hand. Anesthesia is immediate. Incision through this anesthetized zone exposes the fascia. The fascia is then novocainized, subjected to pressure, and divided. This brings him to the remaining muscle or posterior sheath, and to the peritoneum. These structures are infiltrated with novocaine, subjected to pressure, and divided within the blocked zone. If blocking has been complete, upon opening the abdomen there will be found no increase of intra-abdominal pressure, no tendency to expulsion of the intestines, and no muscular rigidity. 5. The peritoneum is next everted and a ½ per cent. solution of quinine and urea hydrochloride infiltrated about the line of proposed sutures; as before, the parts are then subjected to momentary pressure. This infiltration serves as a block; and as its effects last for several days, it should prevent or at least minimize the postoperative wound pain and the postoperative gas pains, and by so much minimize postoperative shock. Quinine and urea hydrochloride causes a certain amount of edema of tissue, which lasts for some time after the wound is healed. 6. The relaxed abdominal wall permits of exploration of the entire abdominal cavity with ease. If there is no cancer or acute infection in the field of operation, the following regions may be blocked as completely and in the same manner as the abdominal wall, viz.: The mesoappendix, the base of the gallbladder, the uterus, the broad and round ligaments, the mesentery, and any portion of the peritoneum. Operations on the stomach and intestines made without pulling on their attachment cause no pain, and hence novocaine infiltration of these viscera is not required. If the brain has received no stimuli during the operation closure of the upper abdomen is as easy as the closure of the lower. No matter how extensive the operation, how weak the heart, or what part be involved, if the anoci technique is perfectly carried out the pulse rate at the end of the operation is the same as at the beginning. The postoperative rise of temperature, the acceleration of the pulse, the pain, the nausea, and the distention are minimized or wholly prevented, as illustrated in charts of a case of abdominal hysterectomy accompanying the author's paper. G. W. Crile (Cleveland Medical Journal, August, 1913).

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Birth Trauma, Surgical Treatment of.—Hemorrhage in the newborn is almost always subdural, as in the adult. Instrumental delivery does not play so important a part as is ordinarily supposed. One of the greatest difficulties in recovery is that the hemorrhage is so often bilateral. The determination of the location of the hematoma is the crux of the situation from the surgical point of view. Those above the tentorium are more easily recognizable than the subtentorial because the muscular symptoms are more prominent. In the subdural type, lumbar puncture will usually show signs of hemorrhage. It is further necessary to ascertain whether, in the pretentorial cases, the hemorrhage is unilateral or bilateral. Lumbar puncture should be

done in all suspicious cases, and also in cases in the subdural spaces of both sides. The first indication is to relieve the pressure. A small piece of muscle applied to the bleeding point will satisfactorily control the hemorrhage in most cases. To attempt to control it with ligatures is a difficult matter. The operative mortality is over 50 per cent. and will of necessity always be high, but it should not be considered prohibitory. C. H. Frazier (Journal of the American Medical Association, December 6, 1913).

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Delirium Tremens, Sodium Bromide Injections in.—In delirium tremens the amount of cerebrospinal fluid is markedly increased, and the fluid is highly toxic, its injection into dogs bringing on a rapid fall in blood-pressure. The author's plan of treatment consists in withdrawal of cerebrospinal fluid through lumbar puncture in amounts as great as possible—50 to 60 c.c. An equal amount of a sterile 1 per cent. solution of sodium bromide is then injected with a syringe. This amount, and even as much as 80 c.c., of fluid was injected into the subdural space in a period of one minute without the least sign of intracranial pressure. Sodium bromide is not toxic to the nervous system. The potassium salt should not be used, as it is slightly irritating. The patients, as a rule, showed immediate improvement, delirium being lessened within a few minutes after the injection. This improvement disappears after a short time, to be followed, however, in from twelve to fifteen hours by a permanent disappearance of the delirium. Occasionally, after a few days there may be a relapse, which is usually controlled by a repetition of the injection. S. P. Kramer (Boston Medical and Surgical Journal, October 30, 1913).

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Diabetes Mellitus, a Point in the Treatment of.—The author calls attention to a point in the treatment of diabetes which seems to have been overlooked, but which he believes to be of fundamental importance, viz., that the diet in diabetes should be arranged so as to make as easy as possible the processes involved in protein metabolism. The dietetic treatments in vogue impose unnecessary burdens on nitrogenous metabolism by giving protein largely in a form the metabolism of which is comparatively difficult — animal tissues. The instability of the liver as regards its glycogenic function is, one would naturally expect, increased by such treatment, and this may be the reason why extreme limitation of carbohydrates has seemed necessary in certain cases.

The argument advanced receives support from the fact that a large proportion of cases of diabetes occur in families in which gout, obesity, chronic arthritis, chronic nephritis, apoplexy, and cardiovascular diseases are prevalent. It was in treating persistent glycosuria occurring in such patients, with nitrogenous metabolism obviously insufficient, that the author's attention was drawn to the therapeutic value of an "easy" nitrogenous diet in diabetes. Illustrative cases are described. Thus, a man 60 years old, of gouty tendency, during the fifteen years ending five years before, had always shown a trace of sugar in the urine. Five years before he was placed on the

"easy diet"; that is, one consisting almost exclusively of milk and its products, cereals, fruits, and vegetables. Since then the urine has been free from sugar.

A woman 43 years old, obese, with lithemic family history, about two years before had developed glycosuria to the extent of 5 per cent., with polyuria and other symptoms. When she was placed on a moderately severe non-putrefactive diet, a generous quantity of selected carbohydrates being allowed, in four weeks her urine was clear. Later, after indiscretion in eating, the glycosuria reappeared. A similar diet reduced the sugar from 4 per cent. to *nil* in nine days. E. E. Cornwall (Long Island Medical Journal, December, 1913).

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Dysentery, Treatment of Bacillary. —The treatment of bacillary dysentery consists in keeping the patient absolutely at rest and warmly covered, inhibiting the stimulating factor in the intestines by attending carefully to the diet, and administering etiologic treatment. Only very small quantities of food should be given at a time. Calomel is valuable in the beginning of the affection, to clean out the bowels and hinder extension of the disease upward. In addition, the patient should be ordered to take acid drinks and given enemata of saline or soda solution to remove the irritating and infectious contents of the bowel. Methylene-blue enemata have been advised.

In the chronic form of bacillary dysentery the enemata that are best are silver nitrate in dilution of 1 : 500 or 1000; tannic acid in 0.25 to 0.5 per cent. solution; thymol in 1 : 500 to 1000 dilution; resorcinol, 1 to 2 per cent., and creolin, 1 to 2 per cent. In some cases an enema of gum arabic mixed with subgallate of bismuth or iodoform gives good results. As an internal remedy, phenyl salicylate, tannigen, ichthyol, and calomel may be used. Serum treatment, inasmuch as it can do no harm and is based upon specific medicine, should be employed. In mild cases serum should be injected in doses of 10 c.c.; in the medium cases it is to be injected twice in doses of 10 c.c. at an interval of from six to ten hours, and in the severe cases the amount may be between 40 and 60 c.c., though when it is used daily not more than 20 c.c. should be given at a time. The serum treatment shortens the recovery from the disease, quickly cures or markedly ameliorates the mild cases, and strongly affects the medium and severe ones. In the latter two grades, improvement in all symptoms is noted in a day or two after the injection, and remarkable results may be seen in a week's time. Where ulceration is well established, the action of the serum is not so pronounced as in the earlier stages; yet, healing of the ulcers with cicatrization often takes place. In such cases, moreover, the fever is reduced, the number of stools markedly diminished, the general condition improved, and the appetite increased. The mortality of this form of dysentery under the use of serum had been reduced to one-third of its former figures. In addition, appendicostomy or cecostomy with irrigation is advisable in severe cases.

In chronic *B. coli communis* infections, rest is not so important as in the foregoing two, although advisable.

The diet should be fluid in type, and semisolid, with scraped meat, when the diarrhea has subsided. The usual methods for the control of diarrhea are in order, and irrigation of the bowel with the various medicated solutions is called for. The writer has treated 4 cases having considerable ulceration with autogenous coli vaccines, and a cure took place in each instance in about three months' time. Anthony Bassler (Interstate Medical Journal, August, 1913).

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Erysipelas, Observations on 800 Cases of.—In a series of 800 cases of erysipelas there were 93 deaths, or 11.625 per cent. According to the lesion, the mortality varied as follows: Facial cases, 500, with 27 deaths, or 5.38 per cent; body cases, 56, with 28 deaths, or 50 per cent.; leg cases, 33, with 9 deaths, or 27.3 per cent.; complicated cases, 211, with 29 deaths, or 13.7 per cent. The type of disease usual among infants is the migratory or general body form, and hence the mortality is highest among them. As to the facial type, in the 173 cases in adult women there were but 3 deaths, or 1.73 per cent. Addiction to alcohol, so common among adult males, accounts, in part, for the great discrepancy between the sexes, as it predisposes to acute alcoholism and pneumonia, as well as intensifies the toxemia of the disease. The causes of the 93 deaths seemed to fall under the following headings: Toxemia of erysipelas, 36; septicemia, 19; pneumonia, 16; nephritis, 3; endocarditis, 3; acute alcoholism, 16.

Diagnosis.—Typical facial erysipelas is usually easily diagnosticated. Erysipelas of the legs or arms or body, unless it be in cases which have extended from the head, presents much more difficulty, and the author believes it is often impossible to differentiate erysipelas in the leg from cellulitis or lymphangitis. About half of all the so-called cases in the leg admitted were of cellulitis, pure and simple, and were at once cleared up either by wet dressings or on giving exit to the pent-up pus. The difficulty in diagnosis when erysipelas starts on the extremities or trunk is that the advancing border is usually less well defined and elevated than in the facial type.

Treatment.—The *internal* administration of iron and quinine has been long recommended for erysipelas, but the author has used these remedies in many cases without seeing any striking beneficial results. The iron often deranges the already enfeebled digestion. For this reason in most cases no internal medication was prescribed aside from sedatives, stimulants, and cathartics, as needed.

Locally, the author's routine treatment for facial erysipelas consists in the use of continually wet cold compresses. Beside each bed is a bowl of boric acid solution in which ice is placed, and cloths frequently moistened with the solution are continuously kept on the face. This method is simple, cleanly, harmless to the eyes, inexpensive, and seems effectually to relieve the pain and burning. Where the leg or arm is involved, wet dressings of boric acid or aluminum acetate are used. In migratory cases with involvement of the body, usually no attempt is made to cover the affected areas, but occasionally ichthyol is applied or the surfaces painted with picric acid solution. The use of solutions of phenol, mercuric

chloride, etc., is dangerous, does not limit the spread of the lesion, and accomplishes no more than plain water or boric acid. Ichthyol, the most widely used local application, does not give the patient as much relief as cold compresses, and besides is neither cleanly nor curative. S. Erdman (Journal of the American Medical Association, December 9, 1913).

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Furunculosis, Treatment of.—Combined tincture of iodine and ichthyol treatment is recommended by the author. Where the boil is already soft, he begins by painting the tincture freely over and around it. Where there are several lesions not very far apart, the entire area is painted over. Where incision is deemed necessary, infection of adjoining healthy skin surfaces is thus avoided. After the iodine application, a gauze pad covered with a layer of 10 per cent. ichthyol in petrolatum is placed over the area, covered with a little cotton, and held with a few turns of bandage. Next day the pus discharged is carefully removed and the area wiped off with tampons impregnated with benzine, in order to free the skin of fats and enable it properly to receive a second coating of iodine tincture. This wiping referred to can be done without causing appreciable pain, the local inflammation having subsided often in a remarkable degree during the previous twenty-four hours. Ichthyolated petrolatum is then again applied, and the whole procedure continued until the pus has been completely absorbed. The disinfection with tincture of iodine must then be discontinued, in order to avoid follicular irritation, and the treatment kept up with the ichthyolated petrolatum, or, better, with pure ichthyol. Where considerable superficial tissue has been lost, epithelial growth can be activated by employing the following ointment:—

℞ Argenti nitratis, gr. xv (1 Gm.).
Balsami peruviani, gr. lxxv (5 Gm.).
Adipis lanæ hydrosi, ℥iiiss (100 Gm.).
M. et ft. unguentum.

Extensive loss of tissue is rare, however, when ichthyol has been used.

In the case of a furuncle which is nodular and not yet softened, iodine is first applied, as before, a thick coating of ichthyol next put on, and the ichthyol either allowed to dry (this requiring about twenty minutes) without a dressing, or a little absorbent cotton placed over it and covered with gummed adhesive material. Next day the dried ichthyol—with the pus, in case it has broken through—is wiped off with warm water, or, if possible, the area washed with soap and water. Iodine tincture is then again painted on, followed at once by pure ichthyol, whether the boil be still closed or have to some extent opened. The iodine applications are continued only as long as redness and swelling indicate an infective nature of the pus, with consequent danger of infection of the surrounding skin. If vesicles appear, the iodine should at once be discontinued, the ichthyol, however, being continued. Generally the iodine applications can be stopped on the third or fourth day, after which the ichthyol should be used three or four days more, or until all inflammation has subsided, as shown by disappearance of tenderness. To avoid soiling the underwear, a single layer of

gauze, tissue, or cigarette paper may be applied after the ichthyol has been allowed to dry.

The 10 per cent. ichthyol ointment should be used only in the neglected and already far advanced cases; pure ichthyol should otherwise always be employed.

Simultaneous internal use of sulphur-containing or arsenical waters, or of Fowler's solution, is advisable in the severe and obstinate cases. According to the author's experience, the combined iodine and ichthyol method is far superior to all other procedures commonly followed, causing surprisingly rapid absorption of the infiltrate and cessation of pain, as well as preventing the formation of fresh furuncular lesions and of conspicuous scars. F. Berger (Semaine médicale, November 26, 1913).

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Gastric Ulcer, Diagnosis of.—That ulcer of the stomach is diagnosticated only about one-third as often as it should be has been proved at autopsy time and again, and can be shown clinically when routine employment of the more exact methods for the recognition of ulcer is tried. At least 90 per cent. of the cases should be recognized with our present diagnostic methods. The average physician does not suspect the enormous number of dyspeptics the cause of whose trouble lies in ulcer of the stomach or duodenum. He looks for the former textbook symptoms and does not find them. The entire subject should be rewritten. The real signs of ulcer are not tested for often enough in patients who have not the unmistakable earmarks of ulcer. What is required is early diagnoses before the typical and evident symptoms appear. Besides the acute or so-called medical ulcer and the chronic indurated ulcer, there can be little doubt that there is at least a third class, chronic non-indurated ulcer,—perhaps an intermediary stage or a forerunner of the indurated ulcer,—which may persist for years and not be recognized. The average duration of the cases operated upon by the Mayos has been twelve and one-half years.

The history and symptoms complained of by the patient are typical in but few cases, notably the chronic surgical ulcer and some of the acute ulcers. There are only two characteristic points about the pain in ulcer: It appears at a fixed time after meals, different in different individuals, but always the same in the one patient; and it is relieved by more food, alkalies, or vomiting. Heartburn, pyrosis, regurgitation, etc., are all common, but by no means characteristic of ulcer.

Hematemesis probably does not occur in 10 per cent. of the patients. As Cabot remarks, it is decidedly more characteristic of cirrhosis of the liver than of ulcer. Even nausea and vomiting do not occur in one-half of the ulcer patients, and, even when present, have absolutely no value unless it be in the effect of the vomiting in stopping pain.

Two points in the history are of decided value in the diagnosis of indurated ulcer. There is exhibited a certain periodicity in some cases. The patient may have been miserable for a couple of months, when suddenly, with no apparent reason, and often in spite of some gross indiscretion, he will be completely relieved of all symptoms for days, weeks, or

months. Again, when pain is at its height all other symptoms from which the patient is suffering are apt to be increased also, and they tend to be relieved by the same measures as arrest the pain.

The results of physical examination are somewhat more reliable than the history and symptoms. There is usually present at some time a tender point at some spot in the epigastrium or at the eighth dorsal vertebra behind, or both. The tenderness is often slight. To be of diagnostic value it should always be in the same place, and there should be but one spot. Points of marked tenderness can often be found in enteroptotic nervous women, but usually further examination will reveal that there are several of these spots. Muscle spasm and rigidity are, when present, but further evidence of tenderness.

The special tests and laboratory aids afford the most exact means of diagnosis. Occult bleeding occurs in the large majority of all ulcers, regardless of the duration or variety. It is, however, characteristically intermittent, and therefore several examinations under varying conditions should be made. The benzidine reaction is the best, but because of its delicacy several precautions are necessary: Test-tubes should be absolutely clean. The patient may be on regular diet when the first examination is made, but if a positive test is secured he should then be put on a meat-free diet for several days, to exclude the blood from the meat, and the test repeated. If a positive test is then obtained, all bleeding points, as hemorrhoids, bleeding gums, etc., should be excluded. If negative results are obtained in a case suspected of ulcer, the patient should be placed upon a coarse and irritating cellulose, but meat-free, diet for a couple of days.

Hyperacidity is found in many patients with ulcer, but is not to be compared in value to the presence of hypersecretion, which is a valuable indication, though not by any means pathognomonic.

As a test for the localization of ulcer, the thread-impregnation test of Einhorn is well-nigh perfect. As a means of diagnosis, certain positive threads are almost infallible, but the author does not believe that a stained thread always denotes ulcer, even in the absence of cirrhosis and cancer. Threads exhibiting a plain mark or two marks denoting the rim of an ulcer, with an unstained portion between, are never misleading. Any sort of a stain which is present on two or more threads at exactly the same point is a sure indication of ulcer.

In brief, there are several combinations which practically assure a diagnosis of ulcer:—

1. Tender point with occult blood.
2. Hypersecretion with tender point.
3. Hypersecretion with occult blood.
4. Tender point with repeated positive thread tests.
5. Tender point with hematemesis.
6. Hematemesis with hypersecretion.
7. Hypersecretion with positive thread tests.

J. R. Verbrycke, Jr. (American Journal of the Medical Sciences, November, 1913).

Infantile Paralysis, Surgical After-treatment in.—The author discusses the use of certain operations on the legs and trunk in these cases. The most common deformity is pes equinus, which in some cases may be due to neglect of the physician to secure the proper position of the foot during the first few months after the attack. The operation for late deformity of this kind is lengthening of the tendo Achillis by the simple step method and suture with fine silk. The sheath should always be restored by fine stitches. It is often wise to lengthen the toe flexors also. The simplest way is to plunge a small tenotome into the sole of the foot at the base of each proximal phalanx, feel for the tendons with the flat of the blade, and divide them while the toe is dorsally extended. Straightening knee contractures is often difficult on account of the danger to vessels and nerves, and if the deformity cannot be gradually corrected shortening of the femur may be required. The author advises saving the articulation by resecting a piece above the epiphysis. Radical operations on the hip may be required, *e.g.*, dividing muscles and tendons. The necessity of retaining permanently the correction by apparatus is to be borne in mind. E. W. Ryerson (Journal of the American Medical Association, November 1, 1913).

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Leprosy, Transmission of.—Bedbugs can be induced to take up lepra bacilli with blood to which the bacilli have been added. Within the bugs the bacilli for a time increase in size and apparently in numbers; but they eventually disappear, partly by discharge with fecal matter, partly also by disintegration within the bedbugs. In the bugs thus infected the writers found the bacilli in the glands as well as in the alimentary canal. Bedbugs acquire lepra bacilli also with blood taken from human leprous subjects, but not invariably. The bugs infected in the laboratory—presumably more heavily infected than those which are infected from human beings—were found capable of transmitting the bacilli by route of their sucking apparatus to the skin of animals bitten. Whether the disease is thus transmitted in nature, *i.e.*, whether the organisms are unchanged and of sufficient virulence to induce leprosy, remains to be proved. If bedbugs do transmit the disease, they are probably only one of a number of possible conveyors, other types of biting and sucking insects being equally open to suspicion (particularly those which regurgitate in biting). A. J. Smith, K. M. Lynch, and D. Rivas (American Journal of the Medical Sciences, November, 1913).

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Obesity, Colloidal Palladium in.—In view of the fact that the metals of the platinum group, and especially palladium, act as active catalyzers or oxygen carriers, the author decided to experiment with their use in disturbances of organic oxidation, and in obesity he used colloidal palladium according to the following formula, trying it first on his person, hypodermically:—

℞ Colloidal palladium, gr. xv (1 Gm.).
Sodium carbonate,
Sodium chloride, of each, gr. vj (0.4 Gm.).
Distilled water, enough to make ℥iiiss (100 Gm.).

The injections were followed by

fever, but not by the weakness and prostration usually noticed after injection of other colloidal metals. A layer of fat over the abdomen began to dwindle, and within ten days there was a loss of weight of 4 kg.

Five milligrams of the drug were injected into 2 rabbits for two consecutive months without any ill results. The autopsy of the animals seemed to show that the metal collects in the subcutaneous connective tissues.

The same solution was next used in 2 cases of obesity. One lost 19 kg. in weight in three months and another 9 kg. after 20 injections. The dosage was begun at 5 and increased up to 10 mg. The remedy was also used in neurasthenia and diabetes mellitus.

The colloidal hydroxides of the 5 other metals of the platinum group, viz., platinum, rhodium, iridium, ruthenium, and osmium, were also tried. The colloidal palladium proved to be the best preparation. With the exception of some degree of local irritation, it exerted no untoward action. The best results were obtained by suspending the colloidal hydroxide of palladium in olive oil and liquid paraffin in the proportion of 25 mg. of palladium to every cubic centimeter. The dose used was 2 c.c., injected under the skin of the abdomen. Kauffmann (Münchener medizinische Wochenschrift, March 11, 1913).

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Ocular Filtration, Importance of Precise Determination of.—The estimation of the rate and amount of ocular filtration by means of the tonometer should be as much a part of the routine work of the ophthalmologist as is the employment of this instrument for the measurement of ocular tension. A normal average index of filtration presumably exists, but in order to establish its limits investigation is necessary in a large series of normal eyes. In glaucomatous eyes increased tension, as recorded by the tonometer, is invariably associated with lessened or delayed filtration; but a disturbance of drainage may exist, as an important indication of incipient glaucoma, with a tension well within the upper normal limit of 25 mg. Delayed or deficient filtration (the most important premonitory symptom of incipient glaucoma) should warn the surgeon, in spite of the absence of characteristic signs of glaucoma, of the probability of a subsequent onset of this disease.

Further investigation is urgently needed to determine the effect upon ocular filtration of the various operations proposed for the relief of glaucoma. That operation which shall be found to influence filtration most effectually will eventually become the operation of choice in this disease. J. T. Carpenter (Pennsylvania Medical Journal, January, 1914).

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Paranephritis, Diagnosis of.—That the symptomatology of perinephric abscess is not always similarly described by various authors is pointed out by the writer. According to some, there is pain radiating down the lower extremity of the same side, while others believe such a radiation of pain so characteristic of psoitis as to afford a means of distinguishing the latter from perinephric abscess. From observation of 4 cases of paranephritis, with diagnosis confirmed

at operation in each, the author is led to ascribe considerable diagnostic value to pain referred to the lower limb of the same side in this condition. Together with fever and polymorphonuclear leucocytosis, this type of pain, he asserts, is one of the most important signs of paranephritis. There are present both pain and tenderness, particularly marked at certain points along the external cutaneous nerve, which, as is well known, passes out below the outer insertion of Poupart's ligament at the anterior superior iliac spine. At this point, and also on the external aspect of the thigh, along the course of this nerve, the most pain and tenderness are to be noted. Belikov-Chtomitch (Meditzinskoie Obozrenie; Semaine médicale, October 29, 1913).

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Pertussis in Children, Vaccine Treatment of.—The vaccine used by the author was prepared in the following manner: The organisms were grown in quantity on ascites agar, removed with salt solution, and shaken. The number of bacteria per cubic centimeter was determined according to the method of Wright, after which the suspension was diluted to the proper standard and preserved with 0.2 per cent. trikresol. The original vaccine contained 20,000,000 dead bacilli per cubic centimeter. The infants treated received ⅓ c.c. and all others ½ c.c. as the initial dose. Within four days the infants received ⅔ c.c. and all others 1 c.c. Many of the children coughed less during the first night. By the second morning the number of paroxysms in nearly every case was greatly reduced. In several young children who had developed bronchopneumonia as a complication, however, no good effects were obtained. These require a different vaccine. The author used such a vaccine in one case, with good results. This patient had received 4 doses of the pertussis vaccine at four-day intervals. These controlled the paroxysms fairly well, but a bronchial cough continued. One-fourth cubic centimeter of a vaccine containing *Bacillus pertussis,* 50 million; *Staphylococcus aureus,* 20 million; *Streptococcus pyogenes,* 10 million, and *Micrococcus catarrhalis,* 30 million, was then injected, and within twenty-four hours there was a marked change in the cough, which soon subsided.

Altogether the author has treated about 70 cases of pertussis with the vaccine, with uniformly good and often striking results. H. A. Davidson (Kentucky Medical Journal, October, 1913).

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Pneumonia, Treatment of.—Ethylhydrocupreine hydrochloride, a salt of a derivative of cupreine, an alkaloid closely related chemically to quinine, was given internally by the author in cases of pneumococcic lung inflammation, with good results. The dose was usually 0.5 Gm. (7½ grains) three times a day, the daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed; in all of these the temperature fell more rapidly, by crisis or lysis, than with other methods of treatment. The drug unquestionably inhibits the growth of the pneumococcus, particularly if used in the early stages of the disease. Where there was no effect, the pneumonia was generally dependent upon some other infection. No untoward after-

effects were observed, although one patient took altogether 9.5 Gm. (2⅓ drams). H. J. Vetlesen (Berliner klinische Wochenschrift, August 11, 1913).

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Renal or Perirenal Abscess as a Complication of Furunculosis.—The author has met with 4 cases of this kind. Three recovered after operative intervention, but the fourth died of cardiac weakness and exhaustion.

Although the renal complication usually follows a sluggish furuncle that has existed for some weeks, it may instead follow a carbuncle, felon, or suppurating wound. The staphylococcus is the causative organism. The most important and almost invariably present symptom of renal involvement is tenderness in the kidney area. Pain is not regularly observed, or appears only gradually. The abscess is usually situated in the upper pole of the organ, which increases in size. Urine examination is, in the majority of instances, negative. Where erythrocytes are found, the presence of local tissue disease or renal congestion is indicated. Only rarely is there a distinct pyuria—in the cases where the abscess discharges into the pelvis. In all cases the fever follows a regular course, and for a week or two, preceding the manifest renal disturbance, constitutes the only objective sign present. Deep palpation of the kidney will afford the earliest clear indication of trouble in this situation.

In the author's fatal case, the abscess developed in the retroperitoneal tissue, below the liver, and, in addition, involved the pelvis and renal vein, causing thrombophlebitis of the inferior vena cava and common iliac veins. In another case the renal abscess was complicated by thrombosis of the right femoral vein, intrapleural exudation, and paralysis of the auditory nerve.

The prognosis is generally favorable if operative treatment is instituted sufficiently early. A large opening and perfect drainage of the kidney region are essential to success. Zinn (Therapie der Gegenwart; Paris médical, September 20, 1913).

* * *

Sciatica, Quinine and Urea Hydrochloride in the Treatment of.—The author treated 8 cases of sciatica by injections of a 4 per cent. solution of quinine and urea hydrochloride in normal salt solution into the subcutaneous tissue over the course of the nerves. There were 50 injections in all, with no untoward result other than the slight soreness that follows any hypodermic injection.

Eight months after the first case had been treated there had not been a return of the attack in any. All the patients experienced decided relief within a short time after the first treatment and none had a severe attack after the third. The injections were given daily for four doses, and then every other day until the patients were entirely relieved. It was because of a determination not to use morphine in these cases that the author resorted to quinine and urea hydrochloride. Two cases of facial neuralgia have also been treated with complete relief after the second injection. H. A. Cables (Journal of the American Medical Association, December 27, 1913).

* * *

Tuberculosis, Treatment of Fever in Pulmonary.—Unless a high tem-

perature is maintained for some time, active attempts artificially to reduce it are not called for. Where the prolongation of fever is a strain on the patient's strength, the antipyretic drug to be preferred, according to the author's experience, is pyramidon. In some instances 5 grains given in cachets at night proved sufficient, while in others 5 grains three times a day were required. As a rule, the drug is well borne, and depression has only occasionally occurred. In some cases excessive perspiration was noted. Although some time ago the author tried acetphenetidin fairly often, the depression outweighed any advantages the temporary lowering of the temperature might have had. In the majority of cases, indeed, antipyretic drugs are not to be recommended. In some patients of a strongly neurotic disposition the temperature is very easily affected, and the curve may be irregular, even although the individual is kept at rest as far as possible in bed; under these circumstances the administration of bromides will be found efficacious.

An agent far more reliable than drugs is rest. Sometimes a short period of this suffices, but frequently some weeks or even months may be required. Rest should be insisted on until, in men, the temperature does not rise above 99° in the twenty-four hours; in women 99.2°, or even 99.4°, may be allowed. When the curve has maintained this level for four to six days, the patient may be allowed to get up for two hours and sit in a chair, and then the next day he can try moving about his room, the rest of the day being spent on a couch instead of in bed. If circumstances permit, the patient can lie in the open air on a couch, properly protected from cold, in front of the window. The time for getting up and the amount of exercise are then gradually extended, careful watch being kept on the temperature chart.

In cases which do not respond to these measures "absolute rest" may be tried, the patient lying "like a log" and being treated as though suffering from typhoid fever, with the exception, of course, of the diet. The beneficial effect of this is especially marked when there has been severe autoinoculation.

To secure the required rest, drugs may sometimes be of use. Patients with severe cough often exhibit a raised temperature, owing to the physical exertion and resulting autoinoculation. If a sedative cough mixture be given a more favorable temperature may be obtained.

When rest and the ordinary drugs fail, tuberculin may be cautiously tried. For some time the author has largely confined himself to the use of tuberculin in febrile cases, and met with a certain amount of success, without ill effects. Either the tuberculin residue (T. R.) or the bacillary emulsion (B. E.) is used. The initial dose is only $\frac{1}{100000}$ mg.; sometimes $\frac{1}{200000}$ mg. If the temperature chart indicates no change after five to seven days the same dose is repeated. If there is then no change, or if no febrile reaction follows, a dose of $\frac{1}{50000}$ mg. should be administered, and another interval of five days allowed to pass; if there is no change another dose of $\frac{1}{50000}$ mg. is given. The same procedure is repeated with $\frac{1}{25000}$ mg. and $\frac{1}{20000}$ mg. If no lowering of the temperature is achieved in this manner, it is better not to proceed with the tuberculin.

If after the initial dose a rise of temperature occurs, the dose should not be increased; in fact, it is advisable to lower it. It is not usual, however, to

obtain a febrile reaction with such small doses. If after the initial dose there is a fall of temperature or flattening of the curve, another dose should not be given until the temperature begins to oscillate again. The pulse must also be noted, undue frequency necessitating a smaller dose and slower progress.

The administration of tuberculin in this way occasionally appears to produce an immunizing effect sufficiently strong to turn the unfavorable course of the disease into a more favorable one. In some cases, on the other hand, under the tuberculin the temperature is lowered and a tonic effect produced, the patient feeling better after each injection, but the progress of the pathologic process is not checked. The duration of the antipyretic action varies, but it is usually short; nevertheless, it is well to give the remedy on account of the temporary relief it affords the patient.

Tuberculin yields the most satisfactory results where the patient is free from fever while at rest, but shows rise of temperature when exercise is taken. By persevering with the treatment a patient who at first could not be up for two hours without a severe autoinoculation is reported able to be up without fever. F. J. Wethered (Lancet, October 11, 1913).

* * *

Urethra, Treatment of Traumatic Rupture of.—In all cases of traumatic urethral rupture perineal incision should at once be resorted to without attempting urethral catheterism. External urethrotomy, with the introduction of the temporary catheter, is the only rational treatment in complete rupture with infection and contusion of the soft parts. In incomplete rupture, when there is not much contusion of the tissues, and infection is absent, immediate suture of the urethra and soft parts of the perineum is to be attempted, with derivation of the urine by suprapubic cystostomy or a urethrostomy in the membranous urethra. C. G. Cumston (New York Medical Journal, January 3, 1914).

* * *

Venesection in Cerebral Hemorrhage.—In cerebral hemorrhage in a full-blooded patient with face flushed and pulse full, bounding, somewhat slow, and of high tension (200 mm.), venesection will immediately reduce the tension, if only temporarily, 50 or more mm., thus aiding the organism to firmly fix the clot. With the common use and ease of employment of the various sphygmomanometers and the certainty thereby of the accurate determination of the blood-pressure, the physician can easily recognize the high-pressure indication. The act of venesection itself has assumed an unnatural formidableness because it is not in common practice. In the unusually stout person there may become difficulty in finding easily a vein at the bend of the elbow, but in these patients there are usually in the legs varicose veins which can be opened. There is no need of speaking of the complications common a century ago. Today there should be none to the physician who uses even ordinary care. The author reports cases illustrating the benefit frequently derived from removing 12 to 48 ounces of blood in the high-pressure cases. A. MacFarlane (Medical Record, January 17, 1914).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing, exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* 55

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* 11

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally complete resolution. *Whitfield.* 56

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of re-

maining lobe removed when improvement occurs. *Mayo.* Page 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1) Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2) grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* 48

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made. *Wolff.* 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomentation applied for five or ten minutes twice, and followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* 50

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valuable for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* 53

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disap-

peared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* Page 55

Tuberculosis, Pulmonary. Diagnosis. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

Ulcers. Treatment. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

Urticaria. Treatment. Pituitary and adrenal preparations found useful. *Morris.* 11

Vomiting. Treatment. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Book Reviews

Ophthalmoscopic Diagnosis. By Dr. C. Adam, Assistant at the Kgl. Univ.-Augenklinik, Berlin. Translated by Matthias Lanckton Foster, M.D., Ophthalmic Surgeon to the New Rochelle Hospital; Member of the American Ophthalmological Society, etc. Octavo of 229 Pages, with 86 Colored Pictures on 48 Plates and 18 Illustrations in the Text. New York: Rebman Company, 1913.

In this useful work, the author, a successor to Julius von Michel, has followed the lead of the latter in laying special stress on the relations existing between diseases of the eye and those of the general organism. The ophthalmoscopic appearance is largely taken as a basis for classification of the various ophthalmic affections; and while the book is well entitled, in view of the number and excellence of its illustrations, to be designated an atlas, the accompanying text fully presents the etiologic similarities and relationships between the various conditions pictured and makes of the work a practical manual of diagnosis. Special attention is given to the needs of the general practitioner, neurologist and syphilologist, various phases of albuminuric retinitis, diabetic retinitis, choked disc, luetic and tuberculous chorioretinitis, etc., being amply considered. In the index are given not only the individual ophthalmoscopic symptoms, but also the general diseases of which they constitute the ocular signs. In a preliminary section the technique of ophthalmoscopy is explained. The colored illustrations are all splendid, and their number, 86, affords evidence of the completeness with which, along with their explanatory legends, they cover the field. The translation is good.

Diet in Health and Disease. By Julius Friedenwald, M.D., Professor of Gastroenterology in the College of Physicians and Surgeons, Baltimore, and John Ruhräh, M.D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Fourth Edition, Thoroughly Revised and Enlarged. Octavo of 857 Pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $4.00; Half-morocco, $5.50, net.

A section on the mechanism of digestion has been added in the fourth edition of this useful book. The sections on metabolism, on the prescribing of diet in general, and on diabetes and gout have been entirely rewritten, as have to a certain extent been also the description of the diet in fevers, including typhoid fever, and the portion of the work on salt metabolism. Duodenal alimentation and the use of the soy bean are considered for the first time, various new diet-lists have been introduced, and the chapter on infant feeding has been thoroughly brought up to date. As in former editions, the aim of the book is essentially practical, the authors presenting a concise and clear account of the kinds, composition, and of the uses of food, under both normal and abnormal conditions. The subject is considered from every angle, the physiology of digestion being first set forth, the various classes of foodstuffs and beverages systematically discussed, the bearing of food preservation, cooking, and adulteration on nutrition pointed out, and, next, the subject of infant feeding succinctly presented. About 100 pages are devoted to the last-mentioned topic. After this come a section on diet for the aged and in pregnancy, one on rectal feeding, and then a large section, occupying over 300 pages, in which the diet in various special diseases is taken up. In the remaining 150-odd pages are chapters on special cures,—such as the buttermilk cure and salt-free diet,—the dietetic management of surgical cases; army and navy rations; dietaries in public institutions; recipes for the preparation of beverages, gruels, vegetables, milk derivatives, etc.; condensed, rapid-reference diet-lists; a sample pamphlet of information for distribution among the poor in summer, etc. The practitioner will find this book decidedly helpful in solving the dietetic problems that daily present themselves to him.

The General Field

Conducted by A. G. CRANDALL

A Strange Policy

According to a well-known magazine, the fees accruing to the Patent Office at Washington have thus far enabled that department to turn over as profits the tidy sum of $7,000,000.

Notwithstanding this fact, such has been the niggardly attitude of Congress that most of the experts in the Patent Office soon relinquish their positions and enter private employment, although their experience and technical skill are sadly needed for the proper conduct of the Office.

This question has been brought up time after time, but for some reason Congress has remained inactive.

It is true that as at present conducted, with the prospect of endless litigation where there are conflicting patents, the system now in vogue provides enormous fees for attorneys, but this seems to be about the best that can be said for it.

Physicians who, in accordance with the ethical standards of their profession, decline to secure patents on medical appliances, reflect great credit upon their profession by so doing. However, they may console themselves in that, whatever they may lose by not trying to patent their inventions, they have incidentally saved themselves much possible annoyance.

* * *

The Poultry Trust

Several prominent dealers in poultry of New York and vicinity have been sentenced to jail because of certain trade methods they have employed which are contrary to the antitrust laws.

It is said that faith is an essential quality in all modern business. Without faith the entire superstructure would fall to the ground. Unfortunately, there is probably no department of commerce which puts our faith to quite so severe a test as the poultry business.

Just how long a time has elapsed since a cold-storage chicken changed from the quick to the dead is one of the contributing causes to the neurasthenia prevailing widely among housekeepers. This, of course, is due to a lack of that implicit faith which is such a delightful thing when it exists. Another element of the poultry situation in which there is an even greater lack of faith is the egg. While the egg is not intrinsically poultry from its external appearance, internal inspection may prove to the contrary, thus producing other etiologic factors of housekeeper neurosis.

The sympathies of a good many men of business may go out to the poultry dealers undergoing imprisonment, but the probabilities are that sympathy among housekeepers will be largely absent.

* * *

Free Speech

One of the accredited privileges of our natural existence is that of free speech.

The most conspicuous example of free speech is the newspaper, to be found in all the cities, towns, and a

considerable number of hamlets. The slightest suggestion of any curtailment of newspaper freedom is sufficient to start an avalanche of denunciation from one end of the country to the other. Yet this same privilege of free speech is pretty expensive.

In order that many thousands of newspapers may exist and protect our liberties, it seems to be necessary for most of these newspapers to secure part of their revenue from the advertisers of all kinds of noxious patent medicines.

To estimate properly the benefits of free speech as symbolized in the newspapers, it is necessary to write down on the other side of the ledger column the cost in money, in vain hopes and natural injury to health, of the illegitimate advertising which enables many of these newspapers to exist.

Some of the newspapers most prominent in criticising the ethics of others carry the most obnoxious forms of quack advertising.

Every newspaper which runs an advertisement of a remedy which is recommended as an absolute cure for a serious bodily ailment should hear from its readers in the most emphatic terms of protest.

* * *

Some Scientific Deductions

While many burning questions difficult of solution may yet become *passé* and are retired to the background, the cost of living problem seems to be an exception, losing none of its interest.

A New Yorker who has been devoting intense study to this subject thinks he has found a solution. He says that it is generally conceded by physicians that 999 persons suffer from overeating where 1 person dies of starvation. Therefore, the most practical way to cut down the cost of living is to stop eating so much.

Following along this line of thought, let us suppose an active suffragette, devoting a considerable share of her energies to general uplift work and coming into contact with other kindred spirits, should take up this question in a practical way. With the aid of a fireless cooker, working while she slept, she could provide her family with wet cereals for breakfast at a moderate expense. For lunch, those who chanced to be at home could have dried cereals, at a less expense; while for dinner, what could be more suitable than some one of the numerous varieties of ready-prepared soups? In this way that strain upon the family digestion produced by roast beef, corned beef and cabbage, or some of the other alleged delicacies of a barbaric age could be avoided entirely. If a higher percentage of protein was required the market is full of canned baked beans; in fact, there seems to be no limit to the combinations which can be easily figured out once you have the right idea.

The indications are that overfeeding among certain families will soon be a thing of the past.

* * *

The Prodigal Son

When the ultrabusy man of big business and his society wife wake up to the fact that, as a natural consequence of their neglect, their more or less no-account son has married a shopgirl, their first impulse is to try to right the wrong.

How do they go about it? Instead of looking for some good qualities in the wife of humble origin, they set out to convince the masculine product of their neglect that he has made a mesalliance. They exhibit a hostile attitude to the wife, and if, as a result of her inexperience and desperation, she may be led in some way to any act of the slightest indiscretion, they gladly seize upon that fact as an evidence of the martyrdom of their son and heir, and shrewd lawyers, backed with plenty of money, carry out their wishes.

An editorial writer in the New York Sun once remarked that the only reason why the ultra-aristocratic families did not mostly become physical and mental degenerates was that occasionally there was some male member of the family who had sufficient intelligence and good judgment to elope with the cook. But, unfortunately, the results of such an elopement are more likely to be as above indicated than in the interest of the modern ideas of eugenics.

Some of the philanthropically disposed people who are establishing loan agencies for the purpose of protecting poor borrowers from the tender mercies of the loan shark, should also form a society for the protection of young wives of humble origin from the injustice and snobbish persecution of the husband's parents.

* * *

To a Peanut Basis Eventually

The gradual exhaustion of the coal mines and oil fields seems to be expected by those lordly magnates who claim to be best qualified to express opinions on the subject.

The agricultural areas produce less and less on the average. Population steadily increases and the demands upon the world's natural resources become steadily greater.

The outlook for the coming generations would be dismal indeed were it not for the peanut. This exceedingly democratic article of commerce is enthusiastically recommended as a protein equivalent for the meats by noted economists. It is also rich in oil, and a great inventor has designed an engine which will burn peanut oil, thus solving the problem of steam energy.

What is the use of worrying about deforestation, soil exhaustion, and mineral wastefulness? The peanut makes the future secure.

Thus we can expect to come to a peanut basis eventually. Our politics have been on this basis for a considerable time already.

* * *

The Doctor's Income Tax

The provisions of the income tax are very mystifying to ordinary citizens. Just what income is seems to be somewhat obscure. Obviously it devolves upon the collectors of the tax considerably to clarify the new law upon this point.

A large number of physicians would especially welcome expert knowledge as to what constitutes their real authentic incomes. Personally, they have never been sure.

Those who keep books carefully have their theories on the subject, but there are a host of practitioners who do not even have a theory.

If a doctor devotes three of the wee small hours to alleviating the sufferings of an urchin who has eaten too

many green apples, and in payment thereof receives three hours of the lad's father's time devoted to mowing the doctor's lawn, the question naturally arises, Is this income, and, if so, should it pay a tax?

Doubtless a good many doctors would gladly pay the maximum tax on a large amount of theoretical income if it could, by some expert process of transmutation, become real income.

* * *

The Cold-air Treatment of Tuberculosis

"The only time we are comfortable is when in the dining hall."

This is the report of a tuberculosis patient under treatment on conventional lines at a mountain sanatorium. Another patient reports total inability to feel warm when in bed although covered with nine heavy blankets.

A certain class of tuberculous patients seem to improve in the open air of winter, even when suffering great personal discomfort in a freezing temperature. But there are also patients who without open-air treatment, and even when compelled to continue their occupations under unhygienic conditions, yet with a liberal diet and avoidance of excessive fatigue, will retain their health and live to a good age.

Exposure to extreme cold with insufficient protection is certainly very depressing for persons who are well. Just why this continuous discomfort should be a good thing for tuberculosis brings in the element of mystery. If such an experience is essential to the rational treatment of tuberculosis in winter, the treatment of the open-air patient in summer should logically contain, as an incidental factor, the application of artificial cold.

Many an excellent therapeutic measure has gone into the discard because of the reaction resulting from the tactics of those who carry every good thing to excess.

* * *

Bread or Cake

When a deputation from the Paris slums was clamoring for bread, a very undiplomatic queen is reported to have said that if the rabble could not eat bread they should eat cake.

A large element of those now afflicted with the prevailing social unrest seem to have acted on this advice. The improvident habits of certain families are sufficiently proclaimed by the enormous sale of prepared foods.

A morning patron of a large grocery and delicatessen store remarked upon a huge display of cakes exhibiting a great variety of shapes. "Oh," said the elderly salesman, confidentially, "it is all the same dough and they will be all gone long before night. Your wife wouldn't use them, nor my wife either. But you see, the women of the laboring families don't know how to cook."

One of the first aids to many a discouraged and distressed family should be a cook book, designed to suggest methods for preparing simple and inexpensive substitutes for the prepared foods of maximum costliness and minimum nutritive values.

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Original Articles and Summaries of Selected Articles

THE ADIPOSOGENITAL SYNDROME IN CHILDREN.*

By GEORGES MOURIQUAND, M.D.,

PARIS.

Different Types of the Adiposogenital Syndrome.—This syndrome is characterized by: (1) signs of brain compression due to a pituitary tumor, including bitemporal hemianopsia; (2) adiposity accompanied by genital atrophy or profound functional disturbances in the reproductive organs. Fröhlich's original case appeared to him at first to be one of incomplete myxedema with obesity. Thyroid medication did, indeed, improve the headache and visual disturbances, but had no action on the adiposity and genital infantilism. X-ray examination then revealed destruction of the body of the sphenoid and sella turcica, with preservation of the anterior clinoid processes, and von Eiselsberg operated for hypophyseal tumor, with resulting symptomatic improvement.

Under the term Fröhlich's syndrome are also to be included cases in which the symptoms are the result of a pituitary lesion other than a tumor, *e.g.*, one due to traumatism. But one well-authenticated case of this kind seems to have been reported, that of Madelung, in which the typical series of symptoms developed in a child that had been shot, the bullet lodging in the pituitary region.

The adiposogenital syndrome has frequently been noted in cases of tumor in the parahypophyseal region or even at a distance from this organ. Supporters of the pituitary theory ascribe the disturbances to indirect com-

* Summary of article in Paris médical, December 6, 1913.

pression of the hypophysis, sometimes merely through the production of hydrocephalus. Essential or idiopathic hydrocephalus, indeed, such as is observed in infants and children, has been held responsible by Marinesco, Golstein, and others, through the resulting pituitary disturbance, for adiposogenital phenomena where they accompany it.

There are some cases of adiposity and genital disturbance resembling Fröhlich's syndrome in their essential features in which hypophyseal or other clearly manifest brain lesions are absent. While evidences of brain pressure are not present, nervous disturbances of epileptic type are, nevertheless, rather commonly found. Radiography of the skull generally shows, instead of a much broadened sella turcica, as in Fröhlich's syndrome, a small sella with abnormal thickness of the sphenoid. These cases can at times be ascribed to a hypophyseal disturbance through the observation of more or less distinct accompanying signs of acromegaly. Gigantism itself, frequently associated with the obesity in these cases, would appear to favor the idea of pituitary causation. In other instances, however, the adiposogenital disturbance may be coupled with nanism and myxedema, this indicating an added thyroid disorder. Such observations have led some authors to describe an adiposogenital syndrome of pluriglandular origin. Careful study of cases shows, indeed, that even where the pituitary lesion is predominant, disease of other glands—gonads, thyroid, etc.—is frequent and plays a definite rôle.

In addition to cases such as those already referred to, there are numerous examples of children, especially at puberty, presenting a so-called essential obesity, developing spontaneously or after an infection, and in whom careful study of the symptoms elicits phenomena suggesting the adiposogenital syndrome. These are puffy, anemic children, with a "whitish" type of fatty deposition. Such a condition is frequent in female children at puberty, when it is associated with amenorrhea or dysmenorrhea. In the male child the genitals remain infantile and the hairy covering is late in appearing. Radiography of the sella turcica should be practised in such instances, and a reduction in the dimensions of this cavity will sometimes be found.

There is a tendency at present to consider Dercum's disease the result of a pituitary disturbance. This affection does, indeed, in a general way suggest the adiposogenital syndrome, and may likewise be accompanied by psychic disturbances, epilepsy, and changes in the sella. In a certain number of cases distinct lesions of the pituitary have been found. Weill reports the case of a child 9½ years old, with painful obesity, lack of genital development, and mental disturbances, all apparently the result of a tuberculous proclivity, but nevertheless markedly improved by combined pituitary and testicular treatment.

Pathogenesis and Experimental Data.—Crowe, Cushing, and Homans, experimenting on over 200 dogs, found that the animals which recover from hypophysectomy present disturbances analogous to those observed in man, rapidly becoming obese, showing disturbed cutaneous nutrition, sexual inactivity, atrophy of the genitals, profoundly disordered carbohydrate metabolism, and mental abnormalities. Where the animals used are young these

phenomena are the most pronounced, a widespread fatty deposit occurring not only beneath the skin, but in many organs, *e.g.*, the liver. Growth is, in addition, arrested. The obesity resulting from hypophysectomy—even in man—is not necessarily associated with an increase of body weight, as there occurs at times what amounts to a fatty degeneration of the entire organism, the specific gravity of the tissues being thereby lowered. Ascoli and Legnani noted this in dogs operated when very young. In the obese puppies hypothermia, mental irritability, transitory glycosuria, and more or less marked lesions of the other ductless glands are also found. In young bitches Aschner observed atrophy of the ovarian interstitial tissue, arrested development of the ova, acceleration of atresia of the Graafian follicles, atrophy of the uterus, and sterility. In adult bitches these changes are less marked. Young males generally show testicular atrophy after hypophysectomy; crytorchidism is frequent and spermatogenesis is reduced and atypical; the prostate and vasa deferentia remain small; sexual activity is delayed and fugacious, and atrophy of the interstitial glandular tissue is almost constant.

Ingestion or injection of pituitary extract was found by Borchardt and others to cause improvement in the dogs in which the adiposogenital syndrome had been experimentally established. According to Cushing and his coworkers, removal of the posterior lobe of the pituitary alone brings on this syndrome, and injection of extracts of this lobe yields benefit.

Both clinical and experimental observations indicate that pituitary lesions, while important, are not the sole factors in the syndrome referred to. A pluriglandular origin of the syndrome must frequently be granted. It is to be noted that in cases of tumor of the pineal body an adiposogenital syndrome is also described; here, however, with the obesity there is hypertrophy instead of atrophy of the reproductive organs.

In addition to tumors and trauma as causes of the pituitary adiposogenital syndrome, lesions of the hypophysis of inflammatory origin developing in the course of typhoid fever, scarlatina, diphtheria, syphilis, etc., can also occur. Furthermore, tuberculosis, by inducing fibrosis of the hypophysis (Thaon, Delille) and other glands, may also bring on obesity. Indications of manifest tuberculosis, or of a proclivity to it, can, in fact, often be elicited in the antecedents of many cases of infantile obesity.

Disturbances of Nutrition in Infantile Obesity of the Adiposogenital Type.—The increased tolerance to carbohydrates noted by Cushing and Goetsch was confirmed by the author in a number of cases of obesity. In one child 10 years old, whose father had died of diabetes and who weighed nearly 60 kilos., 250 Gm. (8 ounces) of glucose or saccharose could be ingested on six consecutive days without bringing on a positive Fehling test. In some cases of Borchardt and of Goetsch the carbohydrate tolerance was lowered from 100 to 50 by injection of extracts of the posterior lobe of the pituitary. This exaggerated carbohydrate tolerance is found also in obese cases of myxedema, and is similarly reduced by administration of iodothyrin. On the other hand, subnormal tolerance of carbohydrates is frequently noted in acromegaly and in exophthalmic goiter.

Relationship of Infantile Obesity to Diabetes.—In view of the above facts, fresh scrutiny of the subject of heredity in the case of obese children is in order. Obesity in the offspring of diabetic parents may appear early or late. It may appear so early that the fetus itself at times is so enlarged as to lead to dystocia (Fabre, Voron, Vondouris). Such fetuses, developing practically in a syrupy medium (hyperglycemia existing in the mother), may be said to be subjected to forced carbohydrate feeding *in utero*. Comparing diabetes with obesity from the standpoint of carbohydrate tolerance, one is struck by the fact that these two conditions occupy opposite positions in this respect. A diabetic mother, however, may give birth to an obese child presenting a high degree of tolerance for carbohydrates. Such tolerance may then be likened to a defensive process; but often, this tolerance gives way, sooner or later, and the obese individual, when grown up, may develop diabetes. It is, of course, not necessary that an obese child be the offspring of a diabetic parent to become diabetic at some future time. Examples in point are some cases of gouty obesity which the author has encountered.

According to Kisch, early inherited obesity tends almost irrevocably toward the development of diabetes when the subject has reached the age of 30 or 40. In late inherited obesity, however, diabetes appears at the age mentioned only in one-half the cases, while in acquired obesity it occurs only in 15 per cent. (this applies merely to the obese type of diabetes, the "thin" type, or infantile diabetes proper, not being taken into consideration). In cases of infantile obesity reaching an adult age carbohydrate intolerance should be carefully examined for from time to time by testing for alimentary glycosuria, and proper dietetic measures enjoined where the intolerance appears.

Diabetes mellitus is not the sole danger to which these dystrophic, obese children are exposed. The author has recently come across a case of early inherited obesity with increased carbohydrate tolerance in which diabetes insipidus rather suddenly developed. This patient, a little girl, showed, in fact, an incomplete adiposogenital syndrome, with disturbed menstruation and a small sella turcica. All the above facts, to be supported in future, it may be hoped, by many additional ones, tend to orient the pathogenesis of certain cases of obesity and of diabetes toward the study of glandular disorders, since certain glands (hypophysis and thyroid) appear capable of causing, according to whether they are in a state of increased or lowered functional activity, the opposite syndromes referred to.

Treatment.—Surgical treatment of certain cases of adiposogenital syndrome now seems warranted. In the hands of the best operators the mortality of intervention has been lowered to 16 per cent. (von Eiselsberg) and 10 per cent. (Cushing), and the results have been generally favorable, especially in cysts of the pituitary. In addition to relief of the neighborhood symptoms and signs of brain compression, as well as improvement of vision, the obesity has at times been diminished and the disturbances of the genital organs overcome.

Röntgen-ray treatment is said to have proved of some value, but results

are not constantly obtained, owing to insufficient penetrating power of the rays used. Operation and X-ray treatment act, according to some, by decompressing the posterior lobe of the pituitary.

Theoretically, if hypopituitarism exists, pituitary medication should be useful. The results thus obtained, however, have been contradictory, whatever mode of administering the gland be followed—ingestion of desiccated pituitary in doses of 0.1 to 0.3 Gm. (1½ to 4½ grains) a day for several weeks, injections of an extract of the posterior lobe, etc. Cushing's best results were obtained by ingestion or injection of extracts of fresh glands secured at the abattoir. The commercial extracts vary greatly in activity, and for practical purposes it seems best to administer, simultaneously or alternately, various ductless-gland preparations. Generally, pituitary and thyroid preparations should be given together, and ovarian or testicular extract added intermittently. Weill has recently employed a novel form of genital opotherapy consisting in the application of a double hernial band over the veins in the inguinal canals. Used in 2 cases of incomplete adiposogenital syndrome in boys, this measure was observed to cause hyperemia and enlargement of the testes, resulting in what might be termed an auto-opotherapeutic effect, a distinct improvement of the obesity following.

SYMPTOMATOLOGY OF EXOPHTHALMIC GOITER.*

By LEWELLYS F. BARKER, M.D.,

BALTIMORE, MD.

The symptoms of Graves's disease are classified by the author as follows: (1) the struma; (2) signs due to heightened excitability of the vegetative nervous system; (3) symptoms indicating profound disturbances in metabolism; (4) signs depending upon secondary changes in other endocrine glands; (5) symptoms due to interference with the functions of the cerebrum, and (6) a peculiar blood-picture.

I. The Goiter or Struma.—This is, in the first place, a struma diffusa; in the second, a struma parenchymatosa, and in the third, a struma vasculosa. The great vascularity of the gland is recognizable by its visible and palpable pulsation. Its surface feels granular, owing to the hypertrophy of the individual lobules, and the consistence of the whole gland is increased. It is tender on pressure, differing in this respect from colloid goiter. There is marked hyperplasia of the parenchyma of the gland with disappearance of the colloid and an increase in the lymphatic tissue, and the interstitial connective tissue may also be present in larger amounts than normal, especially if the glands have been subjected to the Röntgen rays. In some instances the Basedowian change is limited to islets of gland tissue scattered through the gland or through one of its lobes. Even where apparently not enlarged

* Summary of article in the Southern Medical Journal, January, 1914.

when examined in the ordinary way, the thyroid is nearly always found slightly enlarged at operation and presenting the diffuse parenchymatous hyperplastic change referred to; in other cases it is not really enlarged, but shows insular hyperplasia, and in a third group the Basedowian change is not present in the thyroid itself, but affects one of the accessory thyroid glands, most often in the form of an intrathoracic struma. In a few cases the thyroid may be but little altered, but characteristic changes are found in the thymus gland.

II. Symptoms in the Domain of the Vegetative Nervous System.—The most important ocular signs are: (1) protrusion of the eyeballs; (2) widened lid-slits (Dalrymple); (3) dissociation between the movements of the eyeball and the upper lid (von Graefe); (4) insufficiency of convergence (Moebius); (5) infrequency and incompleteness of winking (Stelwag). Less important signs in the domain of the eye are (1) marked glistening; (2) swollen lids; (3) anisocoria; (4) adrenalin mydriasis (Loewi); (5) epiphora; (6) abnormally dry eyes; (7) pigmentation of the eyelids (Jellinek); (8) tremor of the closed eyelids (Rosenbach); (9) subjective feelings of heat or pain in the eyeballs.

In the domain of the heart and blood-vessels the most constant of all the signs is met with, viz., tachycardia. This is exaggerated more by emotional excitement than by physical exertion. In functional nervous cases for whom a rest cure has been prescribed, whenever the pulse rate stays continually above 80 when the patient is lying in bed, the author always suspects hyperthyroidism. Many patients with a pulse rate of 60 to 65 at the beginning show, after rest in bed and overfeeding, a tachycardia of 80 to 100, often thus unmasking a thyropathy which has been, in part, responsible for the nervous breakdown. Electrocardiographic curves in cases with outspoken tachycardia are indistinguishable from those of overactive heart caused by physical exercise. Among the other cardiovascular symptoms and signs are (1) subjective palpitation; (2) moderate dilatation of the heart; (3) accidental murmurs, especially at the base; (4) pulsating carotids and brachials; (5) alterations in blood-pressure (usually low, occasionally very high); (6) pulsus irregularis respiratorius; (7) vasomotor anomalies (erythemas, dermographismus, subjective feelings of heat); (8) in the late stages of the disease myocardial insufficiency.

The skin is usually thin, soft, and moist. Profuse sweating is common. The lessened resistance of the skin to the electric current (Vigouroux's sign) depends upon the overactivity of the sweat glands. The abnormal pigmentations of the skin sometimes seen, especially about the eyelids, nipples, and genitalia, are probably indirectly caused by disturbances of the chromaffin system. The finger-nails are usually long and tapering.

In the digestive apparatus symptoms due to abnormal autonomic innervation are common. The saliva may be overabundant, or it may be scanty. More serious for the patient are the attacks of vomiting, and especially of watery, painless diarrhea (4 to 8 to 30 stools per day). These symptoms may

cause rapid loss of weight, and are prone to occur suddenly and to stop just as suddenly. The diarrhea sometimes alternates with spastic constipation.

In the respiratory apparatus there may be shallow breathing (Bryson's sign), tachypnea, dyspnea, or even typical asthmatic attacks.

In the urogenital apparatus menstrual disturbances are common. Hypertrophy of the breasts is occasionally seen. An abnormally youthful appearance of the breasts in later life is not rare in Graves's disease. In men there may be disturbances of libido or potentia. In either sex hypoplasia of the genital organs is occasionally associated; and in such instances, there is not infrequently evidence of a general involvement of the endocrine glands (hyperthyroidism, hypogenitalism, hypohypophysism, status thymicolymphaticus, etc.). The urine may be increased or decreased in amount, and spontaneous glycosuria is not uncommon. In women a troublesome pollakiuria is not infrequent.

There are some patients (sympathicotonic) in whom the symptoms referable to the sympathetic proper predominate, and there are others (vagotonic) in whom those referable to the craniosacral or vagal autonomic system predominate. There is still a third group (mixed cases) in whom the symptoms may concern almost equally the two systems, and in these the mental symptoms are prone to be more severe. In the sympathicotonic cases the principal symptoms are (1) protrusio bulbi; (2) negative von Graefe; (3) positive Loewi; (4) positive Moebius; (5) dry eyeballs; (6) marked tachycardia; (7) dry skin; (8) constipation; (9) falling hair; (10) slight fever; (11) eosinopenia, and (12) alimentary glycosuria. In the predominantly vagotonic cases the symptoms include (1) relatively slight tachycardia; (2) marked subjective feelings of palpitation; (3) outspokenly positive von Graefe; (4) wide lidslits; (5) negative Moebius; (6) slight or absent protrusio bulbi; (7) epiphora; (8) sweats; (9) diarrheas; (10) gastric hyperacidity; (11) eosinophilia; (12) lymphocytosis; (13) pulsus irregularis respiratorius; (14) unlessened carbohydrate tolerance. In vagotonic cases many of the symptoms are favorably influenced by large doses of atropine.

III. Metabolic Disturbances.—A striking phenomenon of outspoken Graves's disease is the rapid loss of weight, even where the patients eat abundantly. Apparently, all metabolic processes are accelerated, including the total combustion (calories), and the protein, carbohydrate, fat, and mineral metabolism. A frail young woman thus afflicted lying in bed may use as much oxygen as a strong normal man at hard labor. An excess of phosphorus is often lost through the intestine, and the output of calcium in the feces is also increased.

IV. Symptoms Referable to Disturbance of Function in the Other Endocrine Glands.—Eppinger, Falta, and Rudinger believe that hyperthyroidism is accompanied by insufficiency of the internal secretion of the pancreas and increased activity of the chromaffin system (adrenals), and that hypothyroidism will be followed by overfunction of the pancreas and diminution of adrenal activity. If this view be correct, the adrenalin mydriasis and the spontaneous as well as the adrenalin glycosuria so common in Graves's disease can be readily explained. There are many difficulties in the way, however, of

the assumption of a constant relation of this sort. It is not easy to regard the pigmentations of the skin so common in Graves's disease as due to a hyperchromaffinosis. The whole subject is at present in a complex tangle.

Many patients suffering from Graves's disease are also thymus carriers. Capelle and Bayer suggest that variations in the kinds of proliferation in the thyroid and in the thymus account for the manifold types of Graves's disease clinically met with. In general, the thyroid effect is, they believe, predominantly sympathicotonic, while the thymus effect is predominantly vagotonic. Hart has suggested the possibility of a Graves disease due to primary disease of the thymus.

V. Cerebral Symptoms.—There is commonly a kind of apprehensiveness and anxiety, often with phobia and obsessions. Insomnia is usually prominent. In a few cases the mental symptoms increase to an outspoken psychosis. It may be that the fine tremor of the fingers is of cerebral origin.

VI. The Blood.—Usually there is a slight leukopenia, and often an increase in the lymphocytes (35 to 60 per cent. of the count). When such an outspoken lymphocytosis exists, the possibility of an associated hyperplasia of the thymus should be kept in mind.

SERUM TREATMENT OF EXOPHTHALMIC GOITER.*

By S. P. BEEBE, M.D.,

NEW YORK, N. Y.

The iodine content of the gland varies under different conditions in exophthalmic goiter. It is, as a rule, somewhat lower than in the normal gland; on the other hand, it may be higher. The author has analyzed glands that contained no detectable colloid, and yet they contained as much iodine as is contained in a normal gland. This was probably because of the fact that these patients had been given iodine prior to their deaths. It is this iodized protein, which is found to a considerable extent in the colloid—it is probably to be found to some extent in the living cells themselves if there is no colloid—that gets into the circulation in excessive quantities and causes the symptoms of exophthalmic goiter. Stimulation of the nerve of the thyroid gland causes a discharge of this iodized substance from the thyroid. It is not known whether it goes out through the lymph or the blood, but it must go through one of these channels. Stimulation is so important a factor that a stimulation of three hours may cause a reduction of 30 to 50 per cent. of the one lobe stimulated.

The antigen used for the preparation of the author's serum is obtained from the human thyroid. Whether or not there is any considerable advantage in using material from an exophthalmic gland over that from a normal gland,

* Summary of article in the Post-Graduate, February, 1914.

he is unable to say. In preparing the serum sheep are now largely used. The animals are inoculated subcutaneously from the human gland, the product introduced being prepared with care and injected in a sterile condition. It requires six to eight weeks' treatment before the animals are ready to be bled for the supply of serum. It has been found undesirable to carry on the process for more than 3 to 4 bleedings, as the animal plays out and does not form so active a serum as in the beginning (the same has been observed with other processes of immunization). The serum is not all of the same degree of antibody-content, varying somewhat with the animal, but the methods at present used permit of preparing a serum with a selected animal that is efficacious.

Up to the present time nearly 3000 patients have been treated with serum for a sufficient length of time—not all of them under the best conditions—to afford a fairly reliable idea as to how much may be expected from the serum as part of the medical treatment. The author emphasizes the fact that whoever plans to use the serum as the only means of treatment will have some degree of success, but a considerable degree of failure. The other appropriate medical measures form a very important part of the treatment. Fifty per cent. of the patients treated with serum are able to do everything that work, business, or pleasure requires without any distress or untoward indication except possibly a remaining slight exophthalmos or, in some instances, a slight enlargement of the gland. Thirty per cent. of the patients are very much better than before, and others, somewhat better than before. There have been 3 per cent. of deaths.

The treatment needs a considerable length of time. As an example of the results in a mild case the author cites that of a young woman 21 years of age who had an enlarged gland, dilated heart, edema of the ankles, pain in the heart, mild exophthalmos, and considerable gastric disturbance. Treatment was continued for two months, during which period she received 20 injections. Care with regard to her activity was maintained for a period of four months longer. At the end of that time there remained no trace of the disorder. If she had gone originally to almost any surgeon, a lobe and a half of the gland would have been removed.

Another case was that of a woman of 26 who had had the disease in a mild way for three years before a severe attack began. She had lost a great deal of weight and was very weak, but was able to get around and eat a little; occasionally sleepless; pulse 135 to 150, depending on excitement or activity; brownish pigmentation about the neck and shoulders; had lost a great deal of hair; was excessively nervous, breaking down and weeping, and imagining all sorts of things would happen to her. Treated with serum for six months, she was relieved for one month, and the treatment was then begun again and continued for two and a half months. She had then gained 45 pounds; had a pulse between 75 and 85, regular, and of good quality, and the brownish pigmentation had disappeared. Under excitement, she would flush a little occasionally.

A third patient was greatly emaciated; could not retain any food; pulse from 130 to 180—sometimes 200; marked intestinal disturbance,—all in spite of excellent medical attention. She was running a temperature of 99.5° to 100° F., and was delirious at times. After two weeks of serum treatment she began to improve slowly; on the first night it was given she slept comfortably and quietly for the first time without hypnotics in three or four weeks. She was treated with serum for a year and a half, and is now in good condition.

Not every case treated with serum recovers, however, and sometimes it is necessary to operate. Sometimes there is a factor in the patient's own blood which does not allow the serum to act. Nevertheless, this is a therapeutic measure which cannot be ignored in the treatment of the disease.

OCULAR DISTURBANCES OF HYPOPHYSEAL DISEASE.*

By ARNOLD KNAPP, M.D.,

NEW YORK, N. Y.

The posteroinferior surface of the optic chiasm does not lie in the optic sulcus, but on the anterior part of the tent of the hypophysis, immediately anterior to the infundibulum. The ocular symptoms of hypophyseal disease are the result of direct pressure by the tumor on the basal visual paths and on the motor nerves of the eye. As the hypophysis grows in size it enlarges the sella in all directions, in extending upward generally enlarges the infundibular hole, and, like the tumors arising in the infundibulum, presses upon the ventral surface of the chiasm; the visual fibers which cross in the middle are first pressed upon, producing characteristic disturbances. According to Henschen, the typical course of the visual disturbances is as follows: Pressure upward on the ventral macular crossing fibers produces small macular or perimacular bitemporal scotomata; then pressure on the crossing ventral peripheric fibers results in bitemporal quadrant hemianopsia. Additional pressure then involves the uncrossed fibers, and one eye is blind with temporal hemianopsia in the other, or both eyes are blind. Sometimes the color fields are first involved, especially in the upper temporal quadrant. In general, however, the development of the field defect is irregular and not as already stated. If pressure is not exerted on the posterior surface of the chiasm unusual combinations of visual disturbance may result from the enlargement of the pituitary tumor taking place anterior to the chiasm and then invading the orbit.

Temporal hemianopsia occurs so often in pituitary disease—in nearly 50 per cent., according to Uhthoff—that it has long been considered one of the characteristic symptoms. The hemianopsia, however, is not symmetric, but is irregular, with uneven limits. According to Cushing, the primary defect usually first involves the color boundaries alone in one upper temporal

* Summary of article in the New York State Journal of Medicine, September, 1913.

quadrant. This is followed by a more or less complete temporal hemiachromatopsia, possibly with a "slant" in the upper temporal form field, which gradually spreads downward until most of the temporal field is involved. The nasal field in turn shrinks away from the center as the blind field enlarges, though the process seems for a time to be arrested at the macular area. The process in the two eyes may be so unequal that, while one eye is blind, there is but little defect in the field of the other eye.

Homonymous hemianopsia, according to Uhthoff, is very unusual. Cushing, on the other hand, finds that homonymous defects or tendencies in this direction are at least half as frequent as bitemporal ones.

Scotomata, usually paracentral in location, have been frequently described. They may precede the temporal hemianopsia, or be observed on the disappearance of the hemianopsia after operation. It is difficult to explain their formation, unless by peripheric pressure on the chiasm. Concentric contraction of the field has been rarely observed.

The *course* of the visual disturbances is usually slowly progressive. An intercurrent hemorrhage or edema, or suddenly increased size of a cyst, may cause a sudden aggravation of the symptoms. On the other hand, the onset may be sudden and severe, with blindness, followed by partial clearing up of the condition. Daily variations in the field defects have been noted.

Among *ophthalmoscopic changes,* simple optic atrophy is the most frequent, and was present in 20 per cent. of the cases collected by Uhthoff. Choked disc, optic neuritis, and neuritic atrophy are only about one-half as frequent. According to Cushing, a choked disc may become superimposed on the atrophic nerve head from the internal hydrocephalus complicating the pituitary tumor.

The *ocular muscles* are implicated in between 10 and 25 per cent. of cases (Uhthoff). The changes are nearly always oculomotor pareses, often in the form of ptosis. Complete and bilateral oculomotor paralyses are uncommon. Paralysis of the abducens is very unusual. Nystagmus, changes in pupillary action, and exophthalmos have been observed in varying frequency; they are of no particular diagnostic importance.

THE INFLUENCE OF THE THYROID GLAND UPON BLOOD-PRESSURE.*

By H. EWAN WALLER, M.R.C.S., L.R.C.P.,

LONDON, ENGLAND.

While blood-pressure experiments with thyroid extracts have shown a fall of pressure, this fall, as exhibited in tracings, has been extremely transient, the previous level being usually regained in less than a minute. Upon clinical evidence the author maintains that the ultimate effect of thyroid activity *in situ* is to raise the blood-pressure, and, further, that the same result is

* Summary of article in the Practitioner, May, 1913.

produced by the administration of thyroid extract. In myxedema, *e.g.*, the blood-pressure is usually low, whereas in Graves's disease it is usually high. The earlier the case of Graves's disease, the higher the blood-pressure. When the disease has become severe or lasted any length of time, the heart naturally suffers; but even in these cases, oftener than not, the heart muscle is strong enough to maintain a pressure above the normal. The thyrotoxic heart is characterized by undue frequency, a diffuse apex beat, an enlarged left ventricle, and a rise in blood-pressure, and it is difficult to see how this could be the case if the effect of thyroid activity were to lower blood-pressure. Again, the resemblance between the menopause and Graves's disease is striking as regards the flushing, sensation of heat, sweats, nervousness, palpitation, and high blood-pressure. The latter is not infrequently responsible for definite cardiac trouble and occasionally for apoplexy at this period. Estimating the blood-pressure on several occasions during a "flush," the author found it as high as 250 mm. Blair Bell makes definite reference to the "thyroid gland, which is responsible for the rapid vasomotor changes" at this epoch. Admitting special thyroid activity in Graves's disease and at the menopause, conditions usually associated with high blood-pressure, one is in a position to state that thyroid activity certainly cannot be an effective reducer of blood-pressure, unless, indeed, by damaging the heart.

The author has noticed in many cases that the blood-pressure rises when thyroid extract is given, and has learned to watch for this result very carefully when the drug is administered, either continuously or in large doses. There is danger of causing cardiac dilatation by raising the blood-pressure to a point incompatible with the musculature of the heart in an anemic, feeble, or, perhaps, obese individual. As illustrative cases the author cites, among others, the following:—

A girl aged 19 was treated with thyroid extract for a stubborn skin affection. She was athletic, and had a sound heart. The dose given was 1 grain thrice daily with 5 minims of syrupus ferri iodidi, and the dose of thyroid was gradually doubled. This treatment was carried out for one month, and then left off. The blood-pressure was 125 mm. on the first day of treatment, and the subsequent readings were 135, 155, 180, and 145 mm., respectively. The sudden drop at the end after reaching the high level of 180 is again very suggestive of heart strain.

An obese, dull-witted girl of 16, with considerable thyroid enlargement, was treated for over two months with thyroid extract, commencing with 1 grain thrice daily, the dose being gradually increased to 2½ grains twice a day. Five minims of syrup of iodide of iron were given with each dose, part of the time. The blood-pressure at the beginning was 110 mm. Subsequent readings were 125, 130, 135, 135, and 150 mm. Treatment was then changed on account of the blood-pressure. She complained of feeling faint several times, and actually fainted twice between the two records of 135 mm.

A girl of 18 was subject to "dead" fingers. The heart appeared to be normal, but blood-pressure was only 60 mm. Subsequent readings on a short course of thyroid extract were 70 and 95 mm. She was seen again five months later and blood-pressure was 100 mm. The prescription was repeated, and six days later the blood-pressure was 110, and in yet another week 125 mm.

It is apparent that the thyroid does not contain in itself any substance comparable with pituitrin or epinephrin in its *immediate* physiologic effects, or the fact would long ago have been demonstrated with certainty by physiologic experiment. Farini and Vidoni, nevertheless, found that during artificial circulation of thyroid extract through the posterior extremities of cats and rabbits the effect was vasoconstrictor, never vasodilator.

In conclusion, the author suggests that thyroid treatment is a useful means of stimulating the general circulation and raising the blood-pressure, provided the heart is strong enough to stand the increased work. A careful watch must be kept on the pulse rate and blood-pressure for indications of heart fatigue. Where the heart is weak, or debilitated after acute illness, one must be especially cautious.

EXPERIMENTAL STUDIES IN TETANY.*

By W. G. MacCALLUM, M.D., and KARL M. VOGEL, M.D.,
NEW YORK, N. Y.

The authors report experiments made for the purpose of determining in what particular blood is altered during tetany so as to produce hyperexcitability of the motor nerves. As a working hypothesis it was assumed that (1) there may be a lack of calcium in the blood and tissues; (2) there may be a circulating poison which, like an oxalate, could render inactive the circulating calcium, and (3) there may be a substance in circulation vaguely resembling strychnine in its action upon the nervous system and directly causing the hyperexcitability. It is impossible to decide with present knowledge which, if any, of these explanations is the true one, but certain experimental results are brought forward by the authors.

If tetany blood be used to perfuse a normal leg the excitability of the nerves rises to a characteristically high level, and the addition of parathyroid extract to the blood has little or no effect in lowering this excitability.

Parathyroid extract, whether from the ox or the dog, fails when injected into the circulation of an animal in tetany to reduce the excitability of the nerves markedly or permanently, although it seems to affect the more sensitive ganglion cells, thus cutting off excessive impulses to the periphery. Although the nerves remain hyperexcitable, tetany is usually much diminished or abolished entirely. This seems to be analogous to the action of ether or any other anesthetic, which may inhibit the activities of the ganglion cells although it leaves the nerves excitable and able to conduct impulses. An animal in tetany relaxes instantly on being given ether although the excitability of the nerves to electric currents is little changed.

Bleeding followed by the replacement of the blood with an indifferent solution free from calcium stops tetany and lowers the excitability of the

* Summary of article in the Journal of Experimental Medicine, December, 1913.

nerves. Probably this cannot be ascribed to the removal of a circulating poison, but rather to a general disturbance of the nutrition of the nervous system.

Oxalate-like substances introduced into the circulation rapidly, and for a short time only, may kill the animal, but they seem to produce no change in the excitability of the nerves. If the solution is injected very slowly and over a long period the protective action of the body seems to be overcome and the excitability of the nerves rises to high levels. This seems to resemble somewhat the latent period after the destruction of the parathyroids before tetany begins.

Direct analysis of the blood shows that, as compared with the normal, the blood of an animal in tetany is very poor in calcium. Administration of parathyroid extract does not increase this calcium content. On the contrary, if the extirpation of the parathyroids has been incomplete, so that tetany does not appear, the calcium content of the blood is that of the normal animal.

Thus, in spite of efforts to shake it, the theory that tetany is closely dependent upon a disturbance of the calcium content of the blood is supported by stronger evidence than any other, but much remains to be done before a clear conception of the process is reached.

Abstracts from Current Literature on the Internal Secretions

A Manifestation of Hypothyrosis in the Lower Urinary Tract.—In every one of 4 cases of hypothyroidism with urinary symptoms which the author examined cystoscopically, anatomic alterations of apparent hypothyrogenous origin could be demonstrated. It is known that in hypothyrosis the mucous membranes of the tongue, uvula, and nose may exhibit a doughy, edematous swelling. Such alterations were found in the bladder or urethra in the 4 cases mentioned. That they were entirely dependent upon the hypothyroid state was evidenced by their decline and increase in accordance with the fall and rise of the other hypothyroid phenomena on the exhibition or withdrawal of thyroid preparations.

In Case I, that of a woman 38 years old, there were the edematous infiltrations of the face, the swollen nose and lips, and especially the doughy pads around the much-infiltrated eyelids, typical of myxedema. The skin felt thick, perspiration was almost entirely suppressed, and there were headaches, depression, and apathy. For involuntary urinary escape topical treatment had been given. On examination the walls of the urethra were seen not to lie in apposition, but about 2 cm. inward; the cystoscope became slightly impacted, which is unusual in the readily dilatable female urethra. The introduction of the instrument caused some irritation along the next 3 cm. of the narrowed urethral canal.

There occurred a slight oozing of blood. The cystoscope showed in the place of the longitudinal fold on the floor of the urethra a baggy, edematous thickening extending well into the bladder. The infiltrated portion appeared somewhat paler than the surrounding tissues. The thickened, puffy mucosa along the floor of the urethra seemingly kept ajar the walls of the meatus, and thus the dripping of the urine can be explained. Administration of 15 grains (1 Gm.) of thyroid extract daily in divided doses in the beginning brought about cessation of the hypothyroid phenomena, including the urinary dripping, in an incredibly short time. The patient continues the thyroid extract in daily doses of 5 grains (0.3 Gm.). Reexamination made two months after institution of this treatment showed entire absence of the anomalous condition in the urethra.

Case II was one of adiposis dolorosa with myxedematous manifestations and was also of interest because of the synchronous abatement of the symptoms of both affections, including redundancy of the vesical mucosa, after thyroid medication and a general antiobesity treatment. The patient was a woman 47 years old.

Case III, that of an unmarried woman 22 years old, was classified by the author as one of "hypothyrotic constitution" in the sense of Wieland. These are cases of embryonic glandular hypoplasia of the thyroid in which the hypothyrotic phenomena *per se* are usually more or less obliterated, but in which infective or traumatic injuries, no matter how slight, may occasion most acute manifestations of hypothyroidism. At the same time the patient exhibited a number of symptoms that pointed to constitutional lymphatism. The latter and the hypothyrotic constitution, in the author's experience, are not infrequently correlated.

The patient was small of stature and very obese, soft, uneven fat pads being distributed over various regions of the body. The Schneiderian membrane exhibited a more or less constant edematous character, and the same was the case with the mucosa of the soft palate and also, from time to time, with the uvula. There was a marked anteflexion of the uterus, which was in extreme retroposition, and a fetid vaginal discharge. Besides attacks of hysteria and periods of melancholia, loss of energy, and decline of memory, the principal complaint was frequent urination, strangury, and vesical tenesmus. Thirty bladder irrigations had only tended to aggravate the vesical irritation. The local examination showed a congested and swollen meatus, a rather short urethra with very little contractile power, and what appeared to be a uniform edematous infiltration of the trigonal mucosa directly behind the orifice of the urethra. The patient was operated upon for her uterine condition, but five weeks later still complained of strangury and vesical tenesmus. Administration of thyroid and ovarian substances was followed by complete restoration; her psychic symptoms and urinary difficulty entirely vanished.

Case IV, a man 51 years old, referred on account of supposed kidney disease, showed myxedematous swellings of the eyelids and over the

clavicles, bladder irritation and frequent micturition, pronounced apathy and mental depression, and various other phenomena. The cystoscope showed a normal prostate, but an apparently quite hard edematous swelling, with no recognizable blood-vessels, in the area of the trigone. The urine showed nothing of import. The bladder condition yielded readily to thyroid substance, and the other physical manifestations of hypothyrosis declined to a greater or less degree.

Enuresis in children as well as in adults may be of hypothyrotic or kindred origin, and the cures of such cases after the administration of thyroid substance may be due to the disappearance of myxedematous swellings from the lower urinary tract. In persistent bed-wetting a cystoscopic investigation should be insisted on. Heinrich Stern (Archives of Diagnosis, October, 1913).

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Cyst of the Hypophysis with Infantilism of the Lorain Type.—The patient concerning whom the authors write is a male aged 22 years. At about the tenth year it was noticed that he was not growing normally. He had suffered from enuresis, which ceased at his eleventh year. He also began to complain of headaches, which were so severe that they prevented him from playing with other children, and even kept him awake at nights. His eyes watered considerably, and when he was 13 years old it was discovered that his sight was so poor that he could not read the blackboard at school. Since then his eyesight has been gradually getting worse, so that now he is practically blind. His headaches have continued, and are dull and frontal in character. His physical development has been greatly retarded. He is very irritable. There has never been any indication of sexual power. He has never shaved. Appetite is poor. Bowels are constipated. No polyuria. Some polydipsia.

The patient is 137 cm. (4½ feet) tall and weighs 66 pounds. He is somewhat pale and sallow, and his skin is dry. There is a moderate adiposity. The mentality is sluggish, but the patient is not unintelligent nor illogical. The hair on his head is normal, but the patient has not the trace of a beard nor moustache, and no pubic nor axillary hair. The thyroid is small. The right eye is totally blind. With the left eye the patient can count fingers at one foot. The visual field, however, is much contracted, the temporal half being entirely absent. The hands and feet are small and delicately formed. The pisiform bones are missing and there are no sesamoid bones. The epiphyses of the phalanges, metacarpals, radius, and ulna are just beginning to unite. The penis is small, and the testicles, though present in the scrotum, are exceedingly undeveloped, measuring about 1 cm. in their long diameter. Temperature, 99°; pulse, 112, soft and regular; respiration, 24. Blood-pressure, 70 mm. of mercury. Urine: 1260 c.c., acid; amber; clear; specific gravity, 1.022; no protein; no sugar. The carbohydrate tolerance is greatly increased, the patient taking as much as 400 Gm. of glucose without sugar appearing in the urine.

The Wassermann reaction is negative.

X-ray examination of the skull shows an erosion of the dorsum of the sella turcica and of the posterior clinoid processes.

The arrest of body growth and sexual development, with the moderate adiposity, stamp this case as a typical example of the Fröhlich typus or the so-called dystrophia adiposogenitalis of Bartels. The glandular symptoms are, in the main, due to a deficiency of the anterior lobe of the pituitary gland, although it is evident that the posterior lobe function is also diminished, as indicated by the high carbohydrate tolerance and the unusually low blood-pressure.

In the hope of improving the eyesight and avoiding the threatened total blindness, and incidentally relieving the headaches, operation was decided upon. By Knavel's infranasal sublabial transsphenoidal approach the anterior wall of the sphenoidal sinus was exposed and removed. As soon as the sinus was opened there was a gush of about an ounce of turbid serous fluid—obviously the contents of a cyst, which had eroded the posterior wall of the cell. The cavity was packed with two small iodoform tampons, one of which was led out through each nostril, and the sublabial incision sutured with silk. There were irregular rises and falls of temperature from 103.5° to 100° for nine weeks following the operation. The patient was drowsy, slept most of the time, ate very little, vomited frequently, complained of headache, looked pale, and began to show edema of the face, hands, and feet. In spite of constant irrigation of the nasal cavities there was profuse purulent discharge, especially from the right side. Finally, these conditions ceased, and the patient made a rapid recovery.

The patient now looks well and has gained 10 pounds in weight. His headaches are entirely gone and he sleeps through the night, something that he has not done in many years. His appetite is excellent, the bowels more regular, and he is much more talkative. He has entirely lost his irritability. He is able to walk alone on the street, and insists that he sees his way. The X-ray of the hand shows exactly the same condition as before. The patient has been put on desiccated pituitary substance (anterior lobe), 2 grains, three times a day, after meals.

During six days on a standard diet, this patient showed a slight retention of nitrogen, while the absorption of fat and protein was normal in degree. There was noted, however, a marked perversion of some metabolic process leading to high and abnormal percentages of the neutral sulphur and undetermined nitrogen of the urine. DeWitt Stetten and Jacob Rosenbloom (American Journal of the Medical Sciences, November, 1913).

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Value of Pituitrin in Surgical Shock.—The author noted a marked effect upon the blood-pressure in patients to whom this product was given before they left the operating table. In an illustrative case, at the beginning of the operation the blood-pressure was about 105 mm. Hg, but

dropped to 80 a short time after the abdomen was opened, and held approximately at this point throughout the operation. After the first injection of pituitrin in this case, before closure of the wound, the blood-pressure increased to 85 and then to 90 within a short time. At this point a second injection of 10 minims was given, and forty-five minutes later the pressure registered 110. The pulse rate dropped in proportion to the increase in blood-pressure. No evidence of shock was noted although the operation had been rather protracted.

All the author's patients, before leaving the operating room, receive pituitrin, 15 minims, hypodermically. After recovery from anesthesia, the following measures are used: (1) Fowler position—fifteen inches of elevation of head of bed. (2) Enteroclysis, using glass nozzle with two or more openings. (3) Hypodermics of pituitrin, 15 minims every three hours for 4 doses. (4) Ice caps to the abdomen. (5) Sips of hot water and hot tea; no cracked ice or cold water for the first twelve hours. (6) Hypodermics of morphine, $\frac{1}{6}$ grain, and physostigmine, $\frac{1}{75}$ grain, for pain or restlessness, to be repeated in three hours if necessary. (7) If blood-pressure is below normal, continuation of pituitrin and addition of hypodermics of camphorated oil, 2 grains every three hours. (8) Catheterization, if necessary, only every eight hours. (9) Water, coffee, tea, orange juice, meat juice, and broths may be given before first bowel movement, after which milk and soft diet may be allowed.

In 800 abdominal operations in which pituitrin was used, the author did not in any instance witness a symptom of shock except in two or three cases, in which a condition simulating "heart exhaustion" was noted. Whether or not this apparent exhaustion was due to overstimulation is a question; many other factors may have been responsible. The symptoms were only transient, the patient responding to stimulation after the administration of pituitrin was discontinued, and in each instance making an uneventful recovery. The writer confirms the experience of others that pituitrin effectually removes gas from the alimentary tract and increases peristalsis. C. A. Hill (Boston Medical and Surgical Journal, May 15, 1913).

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Ovarian Therapy in Pulmonary Tuberculosis.—The author refers to the well-known prejudicial influence of the menstrual periods on the pulmonary condition in women suffering from tuberculosis. The exacerbations, with fever and sometimes hemoptysis, noted at these periods, may occur either where there is dysmenorrhea or menorrhagia, where menstruation is temporarily suppressed, or where no menstrual disturbance whatever exists.

The author has found that the administration of dried ovarian substance to these patients is sometimes remarkably beneficial. He reports ten in which ovarian treatment, besides more or less promptly inducing regularity of menstruation where it had been irregular, caused complete disappearance of febrile reaction and hemoptysis at the periods, and even

brought the tuberculous process in general, previously progressing unfavorably, to a standstill. In but few cases other than those of this series did ovarian treatment not yield some measure of benefit, and in none did it produce any harmful effects. The author points out that Wittgenstein showed in animals that ovarian medication caused a longer survival after infection with the tubercle bacillus, and, in view of his own clinical observations, believes the drug deserving of recognition as a valuable symptomatic remedy in this disease.

The initial dose of dried ovarian substance prescribed by the author is 0.2 to 0.5 Gm. (3 to 7½ grains) daily, continued for a month. Thereafter the patients take the remedy only during the eight or ten days preceding menstruation. In cases with hemoptysis, however, it is best to continue the drug in smaller doses throughout the menstrual period. As for the total duration of treatment, no definite law can be established. As a rule, where the untoward phenomena have not recurred for two or three months the medication can be discontinued, to be resumed later if necessary. If the general antituberculous action of the remedy is to be utilized, the latter will, of course, have to be continued a long time—a year, or even longer. Jaquerod (Revue médicale de la Suisse romande, May, 1913).

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Changes in the Hypophysis Cerebri in Diphtheria.—The favorable results obtained with pituitrin in the treatment of low blood-pressure in diphtheria led the authors to an investigation of the question whether the pituitary might not be the seat of an invasion by the infection, such as has been found to occur at times in the adrenals. The hypophysis was removed from 9 children that had succumbed to diphtheria, and attention was specially paid to the condition of the pars intermedia, considered by many authors the secreting portion of the organ. In *all* cases there was found marked degeneration of the epithelial cells, involving both the protoplasm and nucleus, and extending even to complete loss of cellular structure—the condition as a whole necessarily implying a more or less complete suspension of the secretory function. Examination of the pituitaries of children that had died of other affections—whooping-cough, measles, bronchopneumonia, etc.—in no instance yielded the same pathologic findings.

Experiments in animals were then performed, the authors injecting subcutaneously or intraperitoneally in 12 guinea-pigs 1 to 2 c.c. of an emulsion of diphtheria bacilli in pure twenty-four-hour culture. All the pigs died at the end of forty-eight hours, and here again notable changes were found in the pars intermedia of the hypophysis, while the changes were not seen in the pituitaries of pigs succumbing to an injection of *B. pyocyaneus*. The authors conclude, without denying a direct action of the diphtheria toxin on the circulatory system, that it is very probable that the paralytic phenomena witnessed in respect of the vessels and heart in the course of diphtheria are secondary to a profound change in

the hypophysis, and that the use of pituitrin, as well as epinephrin, is therefore indicated in these cases, the two remedies mentioned constituting, so to say, a specific treatment for the symptom (low pressure) against which they are employed. The circulation frequently fails in diphtheria before there are any clinical signs of cardiac change, and at autopsy the heart lesions are often insufficient to account for the low blood-pressure observed during life. Creutzfeldt and Koch (Virchow's Archiv, ccxiii, 1, 1913; Paris médical, January 31, 1914).

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Parasitic Thyroiditis.—The author refers to a disease first described by Chagas, of Rio de Janeiro, and which is frequently encountered in the State of Minas Geraes, in Brazil. The disease is caused by the flagellate organism, *Schizotrypanum cruzi,* a protozoön found during the examination of the intestinal contents of a blood-sucking, hemipterous insect, *Conorrhinus megistus.* The latter sucks blood and transmits the infection in all three of its (the insect's) stages: larva, nympha, and imago. Chagas produced the disease experimentally in the parrot, guinea-pig, rabbit, and dog, and soon found the organism now called Schizotrypanum in the peripheral blood of persons in a dwelling infested with the Conorrhinus. The parasites multiply in the intestinal contents of the insect, remaining alive a long time, and being sometimes found in the excrement. When the contents of the salivary glands in the insects are examined in the fresh state, flagellated organisms are found in active motion.

The Schizotrypanosoma, as found in the human peripheral circulation, presents two phases, an intracellular and an extracellular. The former occurs in the beginning of the infection. The microscopic diagnosis of the disease is very simple in acute cases, a multitude of flagellated parasites being found in the fresh blood. In chronic cases it is necessary to centrifugate the blood, or even to inoculate a guinea-pig. Clinically, parasitic thyroiditis in human beings presents two forms, acute and chronic. In the acute form there are cases in which nervous symptoms predominate, simulating meningoencephalitis. These cases are almost always fatal. This form is found chiefly in infancy, mostly in the first year of life. The acute attack lasts from ten to thirty days, ending either in death or passing into the chronic form. The symptomatology of the acute form absolutely differentiates the disease from all others. The pathognomonic symptoms are: Continued fever, with flagellated organisms in the peripheral blood; face swollen, and with a characteristic expression; constant hypertrophy of the thyroid gland; crepitating sensation on pinching the skin of the face, showing that there is infiltration of the subcutaneous tissue with mucoid substance; generalized enlargement of the lymphatic glands, especially in the neck; enlargement of the liver, which is never absent, and sometimes, also, enlargement of the spleen. The chronic cases are divided into the following varieties: (1) pseudomyxedematous form; (2) myxedematous form; (3) cardiac form; (4) nervous form, and (5) chronic form with acute exacerbations. Felix Veintemillas (Revista de Bacteriologia é Hygiene, No. 19, 1913).

Thyroid Origin of Hemorrhagic Uterine Disease.—In excessive thyroid functioning the coagulability of the blood is much reduced, while in insufficient functioning the coagulation time is much shortened. These effects throw light on certain cases of hemorrhagic uterine disturbances, suggesting that they are abortive forms of myxedema. Among 20 pure cases of hemorrhagic uterine disturbance the author found in 13 of the patients pronounced signs of thyroid hypofunctioning, and in all but one the coagulation time was from four to eight minutes in contrast to the nine or ten minutes with normal blood. The viscosity was frequently below normal—in a number only half of the normal figure. The author supports the view that thyroid insufficiency is a prominent factor in tetany in pregnancy, and possibly also in eclampsia. It is possible that all these conditions are different stages of the same disturbance in thyroid functioning. In any event, the condition of the thyroid should be ascertained in all cases of eclampsia, and this is easily done by examination of the blood, abnormally rapid coagulation testifying to a lack of the normal thyroid secretion. One of his cases was peculiarly instructive: A young woman with hemorrhagic uterine disturbance had borne twins three years before and had had severe eclampsia at that time; at recent examination the coagulation time was reduced to five minutes, and with a relative neutrophile leucopenia of 45 per cent. there was a lymphocytosis of 48 per cent. (in contrast to the normal 20 to 25 per cent.). It is possible also, he remarks, that the thyroid may be involved in the tendency to habitual abortion. Cases have been reported in which women with goiter who had been married for several years without conceiving bore children after thyroid treatment. Cretin mothers are liable to habitual abortion for a time, but finally bear living children. The habitual abortions of women with infantile uterus suggest that the thyroid may here likewise be in an infantile condition. It seems to be established now beyond question that syphilis is not responsible for all cases of habitual abortion. E. Sehrt (Münchener medizinische Wochenschrift, May 6, 1913).

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Nystagmic Tremor in Exophthalmic Goiter.—Of 46 cases of typical exophthalmic goiter, 22 were observed to show a nystagmic tremor. In 2 instances the nystagmus was spontaneous, and had appeared at the same time as the disease. In the other 20 it was apparent only when the eyes were strongly turned to the side. It consists of a series of rapid lateral oscillations of small amplitude, which cease as soon as forward vision is resumed. In 1 case, however, there were distinct oscillations with the eyes directed forward. In another the nystagmic displacements were very sudden and sharp, and in still another they were slow and exhibited a sort of pendulum-like rhythm. In 1 case the nystagmus was exactly vertical, and appeared when the patient caused the optic axes to converge. The nystagmus was found quite unrelated to exophthalmos, in the sense that it might coexist as well with a slight protrusion of the

eyeballs as with an extreme exophthalmos. Nor did it seem to present any distinct relation to other ocular signs, *e.g.*, those of von Graefe, Moebius, and Stellwag. The nystagmic tremor diminished or disappeared, however, along with improvement in the other symptoms and especially the general tremor.

As to the origin of the nystagmus, the author does not believe it due to muscular paresis, but rather to be a manifestation of hyperthyroidism itself, the thyroid product exerting, perhaps, a stimulating action upon the pontobulbar nystagmogenic zone. This theory seems all the more sound in view of the fact that the nystagmic tremor shows variations corresponding with the disease itself, *i.e.*, it appears closely allied with the general tremor. At any rate, the nystagmus deserves a place among the ocular signs of Basedow's disease, with von Graefe's sign. It seems even to occur with greater frequency than the latter, and its detection clinically is an easy matter. Paul Sainton (Bulletins et Mémoires de la Société médicale des Hôpitaux de Paris, July 24, 1913).

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Iodine in the Diet and its Rôle in Thyroid Disorders.—The iodine content of the thyroid gland can be modified through the diet as well as by medicinal administration of this element, for iodine is more widely distributed in food and beverages than is generally realized. The air also contains iodine,—especially in the vicinity of the ocean, though river water also contains it, that of the Seine, *e.g.*, containing 5 mg. ($\frac{1}{12}$ grain) in every 10,000 kilos. (10 tons) of water. Many plants contain a noteworthy proportion of iodine, while, on the contrary, some do not contain any at all. The following articles may be considered iodine-free: Almonds, artichokes, bananas, young carrots, cocoa beans, chestnuts, Brussels sprouts, coffee beans, hazelnuts, endive salad, beans, lentils, peas, figs, strawberries, raspberries, melons, oranges, plums, pears, apples, grapes, wheat, rye, oats, barley, black radishes, and tomatoes. The following contain a great deal of iodine: Pineapples, beets, mushroms, rice, garlic, and dandelion leaves. French wines, with the exception of champagne, all contain iodine.

Among the foods of animal origin, those obtained from the sea, especially shrimps, lobsters, and mussels, naturally contain the largest proportion of iodine. The meat of herbivorous animals contains a relatively large quantity of it, though calf, horse meat, and beef contain but little. Pork possesses a high iodine content. The flesh of game, including both mammals and birds, also contains a notable amount of iodine. Eggs can in general be put down as iodine free, while milk belongs to the group of foods with an intermediate iodine content.

From data such as the preceding the physician will be able readily to decide what articles of diet and beverages he may order in exophthalmic goiter, simple goiter, myxedema, obesity, etc. A. von Bokay (Zeitschrift für Balneologie, vi, 339, 1913; Schmidt's Jahrbücher, November, 1913).

The Part Played by the Suprarenals in the Normal Reactions of the Body.—Starting from the proposition that the existence of secretory nerves to the suprarenal glands may be regarded as definitely established, the author, at the suggestion of Starling, set out to investigate the action these fibers have on the form of the curve of blood-pressure when the peripheral end of the splanchnic nerve is stimulated. The curve does not present a simple rise and fall, but has two summits. The splanchnics were exposed extraperitoneally, and all the nerves to the heart were cut. The second rise, as Lehndorff had already found, is accompanied by constriction of peripheral blood-vessels (even after denervation) and by acceleration and increased tone of the heart (likewise after denervation). The author finds that the secondary rise and all the concomitant phenomena are due to the discharge of epinephrin into the circulation, and are absent after extirpation of both suprarenals. Every rise of blood-pressure brought about by the agency of the nervous system thus involves the co-operation of the chemical mechanism represented by the suprarenal glands. G. von Anrep (Journal of Physiology, vol. xlv, No. 5, 1912).

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Ovarian Function in Basedow's Disease.—Report based on an investigation of 40 cases. Deficient function of the ovary predisposes to the production of Basedow's disease. The physiologic climacteric may be considered to predispose to this affection. In 5 cases the menstruation before the manifestations of the affection, as well as in the first few months after its appearance, was regular. Entire cessation of the menses at the onset of the affection was noted in 10 cases. A connection between the severity of the cases and the cessation of the menses at the beginning of the disease cannot be established, but cases in which the menstrual flow has either ceased for a long time or in which the amenorrhea is interrupted by rare and scanty menstruations must invariably be classified among the grave ones. The treatment must be directed toward increase of the ovarian function. O. Frankl (Gynäkologische Rundschau, vol. vii, No. 17, 1913).

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Cardiovascular Action of Pituitary Posterior-lobe Extract in Acute Adrenal Insufficiency.—The writers had previously shown that, when purified and delipoided extracts of the posterior lobe of the pituitary of the ox are injected into man, the rabbit, and the dog, they produce, among other effects, a marked fall of arterial pressure. They now record experiments on 8 rabbits in which acute adrenal suppression had been performed under chloroform anesthesia, either by bilateral adrenectomy or by forceps compression of the hilum of each adrenal. On injecting intravenously posterior-lobe pituitary extracts within from five minutes to six hours after the time of bilateral adrenal suppression, a marked rise in the carotid blood-pressure was constantly produced, *i.e.*, the opposite effect of that obtained in the intact animal. H. Claude and R. Porak (Société de Biologie, Paris, May 16, 1913).

Action of Epinephrin on Tetanus Toxin.—The author found that epinephrin exerted a powerful action on tetanus toxin *in vitro,* 1 Gm. of the alkaloid neutralizing several million lethal doses of the toxin. If, however, dried adrenal powder is used instead of epinephrin, all the tetanizing properties of the mixture are retained, even where the adrenal powder employed represents a notable quantity of epinephrin. Hepatic extracts, nervous tissue filtrates, and lecithin are similar to adrenal powder in their lack of antitoxic power. In fact, it is possible that lecithin, so abundantly distributed in the adrenal cells, or one of its derivative combinations, may actually favor the action of tetanus toxin. Conclusions: (1) The amount of tetanus toxin acting on the neurons must be extremely small, most of it being neutralized in the organism, perhaps by epinephrin, in the adrenals; (2) lecithin compounds are not unrelated to the action of tetanus toxin on the nerve-cell. A. Marie (Annales de l'Institut Pasteur, January, 1914).

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Do the Parathyroids Functionate in Intrauterine Life?—The following conclusions are reached by the author: Thyroparathyroidectomized pregnant dogs (in later stages) seemingly go into convulsions earlier and die sooner than non-pregnant dogs. In thyroparathyroidectomized pregnant dogs fetal parathyroids probably do not then compensate for the mother's glands. Possibly some endocrine glands do not functionate in intrauterine life. Unmistakably, the earlier in pregnancy thyroparathyroidectomy is performed, the longer the postoperative life. The results of the author's work may in a sense support the parathyroid theory of eclampsia. Direct evidence of heredity as an etiologic factor in goiter came to light in the series. In dog fetuses the left thyroid gland is almost always the larger. A. Werelius (Surgery, Gynecology, and Obstetrics, February, 1913).

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Internal Secretion of the Corpus Luteum.—The author, to isolate the specific substances of this body, separated the yellow structures from the surrounding connective tissue and rubbed them up with sand and distilled water. The resulting mass was then extracted with salt solution and its effect on the coagulation of human blood studied. In every instance coagulation was accelerated. He believes that during normal ovulation coagulation of the blood is favored by the luteum cells which are freed during the rupture of the Graafian follicle. It is possible that the substances liberated enter the blood-stream and bring about a cessation of the menstrual discharge. Kiutsi (Monatschrift für Geburtshülfe und Gynäkologie; Charlotte Medical Journal, May, 1913).

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Use of Epinephrin in Hiccough.—Report of a case of obstinate hiccough in a patient suffering from renal colic in which, after large doses of bromide, chloral hydrate, chloroform, and cocaine; injections of morphine, gastric lavage with silver-nitrate solution, spraying ethyl chloride

on the epigastrium, and even general chloroform anesthesia had failed to bring relief in the course of eleven days, administration of epinephrin proved promptly effective. The patient took 10 drops of the 1:1000 solution; at once the hiccough became milder and less frequent, and upon repeating the dose half an hour later the symptom completely and permanently disappeared. The action of the drug in relieving hiccough is compared by the author with the "antispasmodic" action it is well known to exert in bronchial asthma. J. Ségal (Journal des praticiens, August 23, 1913).

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Myxidiocy in the Presence of the Thyroid Gland.—The rare occurrence of myxidiocy in spite of the presence of the thyroid gland is explained by the author in the following manner: As the result of a developmental disturbance there has ensued a deficient growth of the brain and of the system of endocrine glands, especially the testicles, thyroid, and hypophysis. The idiocy is the result of the underdevelopment of the brain. The disturbance of correlation of the entire glandular apparatus thus produced gives rise to the myxedematous condition. Goldstein (Deutsche Zeitschrift für Nervenheilkunde, vol. L, Nos. 1 and 2, 1913; Archives of Diagnosis, October, 1913).

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Action of a Lipoid from the Thyroid Gland.—The author reports experiments which showed that a lipoid he has extracted from the thyroid gland greatly stimulates the functions of the adrenals, ovaries, uterus, and testicles. The lipoid appears to stimulate the heart much more in female than in male animals. Its action on the spleen and kidneys is only feeble. It is a powerful stimulant, however, to the thyroid gland itself. Its action shows a considerable difference in the two sexes. It exerts an effect on the growth of young animals, rendering it more regular. In adults, on the other hand, it brings about a loss in weight. H. Iscovesco (Société de Biologie, Paris, November 8, 1913; Paris médical, November 15, 1913).

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Relation of Palpitation and Tachycardia in Exophthalmic Goiter to Cardiac Lesions.—In 80 per cent. of cases of exophthalmic goiter, palpitation may last for years without any sign of organic heart lesion developing. The association of mitral regurgitation with exophthalmic goiter can be explained by the occurrence of a history of rheumatic fever in 10 to 12 per cent. of exophthalmic goiter cases. Tachycardia is itself the result of serious organic disease of the heart, not perhaps obvious for the time, but becoming manifest later on. S. West (St. Bartholomew's Hospital Journal, August, 1913; Archives of Diagnosis, October, 1913).

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Parkinson's Disease in a Case of Long-standing Exophthalmic Goiter.—The author reports such a case and states that the center giving rise to the tremor in paralysis agitans may be stimulated either by ordi-

nary circulatory disturbances, by disorders of nutritional metabolism felt to an exaggerated degree in an abnormal organ, or by various toxic agents, among which may be mentioned as frequently operative ductless-gland products altered as to quality or quantity, in particular those of the thyroid and parathyroids. G. B. Cacciapuoti (Annali di neurologia; Archives de neurologie, January, 1914).

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Action of Epinephrin in Acute Experimental Renal Disease.—Rabbits poisoned with uranium oxide can be kept alive with epinephrin injections as long as there is no anuria, even if they have received many times the lethal dose of uranium. Improved function is evident in a decrease of albuminuria and an increase of urinary output. The intense parenchymatous degeneration of the kidneys, however, is in no way influenced by the epinephrin. Hess and Wiesel (Wiener klinische Wochenschrift, February 27, 1913).

* * *

Use of Hormonal in Operative Gynecology to Induce Peristalsis.—From experience with the use of hormonal in 200 cases of laparotomy for various indications, the writer concludes as follows: Intramuscular injection of hormonal is of use after laparotomies (1) to prevent intestinal paresis, and (2) to regulate the intestinal function during convalescence. Such intramuscular injection of hormonal is absolutely safe. Intravenous injection, however, is to be avoided. J. Szenassy (Zentralblatt für Gynäkologie, July 12, 1913).

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Mental Disturbances in Exophthalmic Goiter.—Report of a case of Basedow's disease in a woman 41 years of age, associated with manic-depressive insanity. The last attack lasted four years and was characterized by profound asthenia and emaciation, the body weight sinking to 24 kilos. At present a mild hypomaniacal state exists and the patient's weight has risen to 59 kilos. in the course of eighteen months. Trénel and Capgras (Société clinique de Médecine mentale, Paris; Archives de Neurologie, January, 1914).

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Thyroid Lesions in Unused Guinea-pigs.—The authors found chronic lesions of the thyroid to be rather frequent in apparently normal guinea-pigs that had not yet been employed for experimental purposes. Caution is therefore necessary in the interpretation of lesions of this organ where experiments supposed to injure have been performed in this animal. Beelson and Weinberg (Société anatomique, Paris; Presse médicale, July 30, 1913).

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Thyroid Transplantation.—Two children with congenital myxedema exhibited no improvement under thyroid treatment, but were markedly benefited by grafting of a piece of the mother's thyroid into the spleen and tibia, respectively, after a preliminary operation to prepare the pocket for the graft. Kotzenberg (Medizinische Klinik, March 23, 1913).

Department on General Medicine

Original Articles

THE VALUE OF ANATOMY AS APPLIED TO THE DIAGNOSIS OF MEDICAL CONDITIONS.

By W. E. ROBERTSON, M.D.,
Professor of Medicine in Temple University,
PHILADELPHIA, PA.,
AND
JOHN B. ROXBY, M.D.,
Professor of Anatomy in Temple University,
SWARTHMORE, PA.

Were it not well known that the medical clinician rarely applies anatomic knowledge in his diagnostic work, the title of this paper would seem to be an anachronism. Despite the fact that John Hilton long ago adumbrated in his lectures at Guy's Hospital, and later in his work entitled "Rest and Pain," much that will be discussed here, it does not seem to have filtered through to the practising physician, whether a family doctor or consultant. The chief reason, therefore, probably lies with those who teach anatomy in our schools, as well as, in no small degree, with the teachers of general medicine and the specialties, to whom anatomy has often become a lost art. The surgeon must of necessity possess a fairly intimate knowledge of anatomy, though we have often heard surgeons assert that too intimate a knowledge renders one a slow, careful dissector rather than a bold surgeon. Medical practitioners, on the other hand, not recognizing its splendid helpfulness, allow their anatomic knowledge to wither through disuse. Let us quote John Hilton once more. Speaking of the method of diagnosis by anatomic association,[1] he says: "But surely these parts belong as much to medicine as to surgery, and to surgery as to medicine. It appears to me to be a fictitious line which divides the principles of medicine from the principles of surgery. Both must be essentially based upon precisely the same physiological and pathological laws, and therefore, if I as a surgeon, show you that there is a certain systematic distribution of the nerves to the muscles, to the skin, and to the joints which those muscles move, surely I may be at liberty to extend my illustrations to other parts of the body." This is the keynote of the theme. Anatomy is of as much importance to the physician as it is to the surgeon, for he may mutilate or kill through ignorance just as surely as an unqualified surgeon, though not quite as quickly.

The subjects we have chosen for discussion are as follows:—

[1] "Rest and Pain," edited by Jacobson, 1898, p. 246.

1. The relations of the ethmoid cells and sphenoid sinus to the optic nerve and the ophthalmic division of the trigeminal nerve, and the clinical phenomena due to their mutual propinquity.
2. Transferred abdominal pain in intrathoracic disease.
3. The clinical significance of the autonomic cerebrospinal arc.
4. Sacroiliac disease and possible errors in diagnosis.
5. Abdominal pain in angina pectoris.

1. Relations of Ethmoid Cells and Sphenoid Sinus to Optic and Trigeminal Nerves.

As an illustration of the first of these groups we wish to cite two cases:—

The first was that of a woman of 45, seen by one of us in consultation with Dr. Conrad Hoell, of Camden, N. J. Dr. Paul Pontius, of this city, had also been in attendance with Dr. Hoell, owing to her ocular condition. Eight months before, after a trolley trip to Trenton, the patient had suddenly developed herpes over the left side of the head, the condition beginning in the frontal region, and then extending down the left side of the nose to the tip and over the vertex to the lambdoid. She suffered a great deal of pain. About one week later the left eye became involved, and in twenty-four hours this eye was closed by the edematous swelling of the lids. The skin lesion healed in about four months, but numerous scars marked its site. The edema of the lids lessened, but the ocular condition remained, varying in severity from time to time. Vision had remained, though deficient, till about ten days prior to the consultation, at which time the sclera was very much injected, and the ciliary zone likewise; she also had hypopyon and an ulcer on the cornea. Owing to the pain, she had been given morphine, the administration of which was insisted on by her husband, who would not permit her to suffer; in consequence she had developed a desire for it. This made it necessary to remove her from his influence, and she was therefore placed in a private room in a hospital. On anatomic grounds it seemed palpable that we were dealing with a case of sinusitis, ethmoid and sphenoid, with irritation of the frontal and nasal branches of the superior division of the fifth cranial nerve and probably of the lachrymal branch also. Opportunity was not given at that time for a more intimate study of the nasal chambers, and her condition did not warrant operative interference of any character, so that it is not possible to say with certainty whether we were dealing with a suppurative condition or with a chronic hyperplastic inflammation, but the former seemed the more probable from the clinical course. She was ordered a daily cabinet sweat, preceded by 1 powder hourly for 3 doses of Dover's powder, gr. ij; acetphenetidin, gr. iv, and acetylsalicylic acid, gr. vj, to facilitate a greater degree of diaphoresis. A high colonic flush every second day was ordered, and strychnine sulphate, gr. $\frac{1}{40}$, in Basham's mixture, f℥ss, four times a day prescribed. Locally, the use of a 4 per cent. cocaine solution, alternating with chloretone inhalant, each once daily, both followed by the introduction of a pledget of cotton, saturated in 25 per cent. argyrol solution, and allowed to remain in the nostrils two or three hours, was advised. Within the past two weeks Drs. Hoell and Pontius have informed us that she gradually progressed to apparently perfect recovery under the above measures, except that she continues to insist she must have morphine. To insure against a repetition of the trouble, operation is indicated.

The second patient was referred to one of us by Drs. McCluney Radcliffe and C. C. Biedert in the month of January, 1913. She is 42 years of age, and has an excellent family and previous personal history. Physical examination was negative, except for slight tenderness in the regions of the gall-bladder and vermiform appendix.

Urine practically negative: Specific gravity, 1.015; acid; a faint trace of indican; a questionable trace of albumin; no sugar; microscopically, negative. Blood examination showed 4,260,000 erythrocytes, 8400 leucocytes, and 83 per cent. hemoglobin; Wassermann reaction was negative on two occasions. The first attack of eye trouble occurred in March, 1904, and the next, two years later. At the time she came under observation she had a well-marked keratitis and hypopyon. She was unable to state definitely how many attacks she had weathered since, but for the past three years she said she had averaged 8 to 10 a year. Each attack lasted from two to three weeks, during which she was unable to use the eye, only one being involved at a time. The attacks in the left eye were more severe and of slightly longer duration than those occurring in the right. At the same time she would suffer pain in the cheek, radiating down to the lower jaw and from vertex to base on the affected side, attacks of shooting pain in the affected eyeball, and frontal headache. Of late the attacks had been more frequent.

An examination of the nasal chambers was made by one of us, and large inferior and middle turbinates, but no evidence of pus, were noted. A diagnosis of chronic hyperplastic ethmoiditis was made, and the patient referred to Dr. Pfahler for X-ray examination. He reported as follows: "I find that Miss H. has unusually large inferior turbinals, which seem practically to close the nostrils, and I would think this probably interferes with drainage of the sinuses, and may account for the infection. There is also evidence of exudate in the ethmoid cells on both sides. The maxillary sinuses are clear and the sphenoid sinuses are certainly not filled with pus. The frontal sinuses, I believe, are also clear, though the outer cell on the right side is less transparent than elsewhere. It is not likely, however, that in a case of this kind, of a chronic nature, the disease would limit itself to a single cell of the sinus."

Dr. Biedert subsequently operated upon her. He snared off the middle turbinals, and then, breaking through the ethmoid bulla, curetted the ethmoid cells, removing granulation tissues. No pus was discovered. This was done in April, 1913. Since then she has had two very slight attacks, both in the right eye, which only lasted about forty-eight hours. Her general health, she states, has never been better than at the present time. It seems likely that further operative interference will be required, all of the local morbid focus not having been removed. Sufficient time has not elapsed, however, to permit of judging the extent of the remaining trouble.

Infection of the eye may be one of the expressions of a systemic disease, as syphilis or tuberculosis; or it may be metastatic, as in cerebrospinal meningitis, the infection traveling along the nerve-sheath lymphatics or by way of the blood-stream, or, again, it may be secondary to sinus or nasal disease. We believe that reflex ocular, orbital, and palpebral irritation from these latter sources is a very common condition. Skillern, in his recent book on "The Accessory Sinuses of the Nose," gives some excellent plates showing the anatomic relations and makes frequent reference to the various reflex and infective processes which complicate sinus disease. Badly deflected nasal septa and turbinal hypertrophy, in the absence of actual sinus infection, may likewise invite refractive errors and various reflex phenomena manifested in the distribution of the fifth nerve, especially its superior branch. The close relation between the optic chiasm and the sphenoid sinus and ethmoid cells, especially the posterior ethmoid cells, and the fact that branches of the ophthalmic division of the fifth nerve supply the mucosa of the sphenoid, ethmoid, and frontal cells, the nasal mucosa and the skin of the frontal and scalp

regions, and, in conjunction with the sympathetics, innervate the eye, explain the clinical phenomena.

Marked septal deviations, large spurs, and gross hypertrophies of the turbinals are apt to cause refractive errors, and these are especially prone to be inconstant, *i.e.,* refraction readings made on consecutive days frequently show considerable variation. Such conditions are doubtless the result of irritation of the nerve-endings of the nasal branches of the superior division of the fifth, in their relation with the third nerve and the sympathetic.

Another point of considerable interest presented by these cases is the analogy which they bear to root-zone disease, in segmental areas. Nerves in segmental areas, especially typified by the thoracic group, have anterior and posterior roots in association with the ganglion. Evidence is accumulating to show that this is true of some of the cerebral nerves,—undoubtedly so of the fifth with its Gasserian ganglion and double root, motor and sensory, and probably so of the seventh nerve and its geniculate ganglion, and of the third with its ciliary ganglion. The case of herpes of the cornea, face, and scalp described above permits, therefore, of still an additional interpretation other than infection, viz., nuclear irritation, quite similar to that which occurs in cases of herpes involving the thoracic distribution.

The interpretation of symptoms in sinus disease is rendered more intelligent if the anatomic relations and nerve distribution be worked out. The ease with which infections of the nasal mucosa are transferred to the frontal sinus by way of the middle meatus, directed by the hiatus semilunaris into the ostium frontale and, its upper limit passed, into the air space, is sufficiently understood. So also is understood the access of like infections to the ethmoid cells and sphenoid sinus.

Turning, then, to the nerve distribution of this area, we find that the ophthalmic division of the trigeminal nerve is all-important. Following its frontal branch, we recall that it enters the orbit through the sphenoidal fissure, invested by its own dural sheath; passes forward above the orbital muscles, thence between the periosteum and the levator palpebræ superioris, and, finally, at a point approximating the middle of the orbit, divides into its terminal branches, the supratrochlear and the supraorbital. The supratrochlear nerve, smaller than the supraorbital, gives off near the superior oblique pulley a branch which, joining the infratrochlear, sends filaments to the skin and conjunctiva of the upper eyelid. Turning upward and inward, its subdivisions pierce the frontalis and orbicularis palpebrarum muscles, supplying the integument of the inner and lower part of the forehead. The supraorbital, on the other hand, appears to be the continuation of the frontal nerve. It lies close to the periosteum throughout its course and, as will be recalled, leaves the orbit through the supraorbital notch or foramen. Here it sends a small twig to the frontal sinus to supply its diploë and mucous membrane. As it passes from the orbit it sends some small branches of supply to the upper eyelid. It now divides into the larger outer and the less inner branches. These turn upward underneath the frontalis muscle, relatively deep grooves being provided on the frontal bone for their passage, and are then distributed

to the pericranium and scalp. As a rule, the outer branch proceeds as far back as the lambdoid suture, while the inner branch passes to the region just dorsad to the coronal suture. Both branches communicate with the facial, giving rise to a sensory-motor mechanism for the musculature.

The distribution of the nasal branch of the ophthalmic division is also of interest. This nerve, entering the orbit through the sphenoidal fissure, inclosed in a dural sheath, passes between the heads of the external rectus and, slipping between the upper and lower branches of the oculomotor nerve, turns obliquely inward, crosses the optic nerve, passes beneath the superior oblique and superior rectus muscles, and is projected above the internal rectus to the anterior ethmoidal foramen. Traversing this, it enters the cranial cavity and passes forward in a groove along the lateral aspect of the cribriform plate of the ethmoid. Now, dropping through the nasal fissure and leaving the cranium, it enters the nasal fossa for distribution. In its course it gives off the sensory root to the ciliary ganglion, and also the two long ciliary nerves. These pass forward mesad to the optic nerve and, joining the short ciliary nerves, pierce the sclerotic coat to be distributed to the iris, ciliary muscle, and cornea.

The infraorbital branch, running along the inner orbital wall, passes beneath the superior oblique muscle and its pulley, and forward is distributed to the integument of the upper eyelid, root of the nose, conjunctiva, lachrymal caruncle, and lachrymal sac. Of the terminal branches (Piersol's grouping) :—

(*a*) The septal branch supplies the mucosa of the ventral portion of the septum.

(*b*) The external nasal branch supplies the ventral portion of the middle and inferior turbinate regions and the outer wall of the fossa.

(*c*) The anterior nasal branch, passing downward in a groove on the dorsal surface of the nasal bone, between the nasal bone and superior lateral cartilage of the nose, emerges under cover of the compressor naris and supplies the integument of the ventral nasal surface and tip of the nose.

It is generally accepted that branches are given off in the anterior ethmoidal foramen to the frontal and ethmoidal sinuses. Luschka and Krause both describe a branch passing back through the posterior ethmoidal foramen to the posterior ethmoidal cells and sphenoidal sinus.

With these points in mind, let us turn to the sympathetic. It will be recalled that the intracranial sympathetics, giving rise to the carotid and cavernous plexuses, the former laterad and the latter mesad to the internal carotid, and the two intercommunicating, are but the upper continuation of the superior cervical sympathetic ganglion. Further, these plexuses give off the branches, which in turn are distributed as pupillodilator fibers, vasomotor fibers to the arteries of the head and neck, pilomotor fibers to the integument of the head and neck, and motor fibers to the involuntary muscles of the orbit and eyelids.

The additional anatomic factor in this study is the ciliary ganglion. Receiving its sympathetic root from the cavernous plexus, its motor root from the oculomotor nerve, and its sensory root from the ophthalmic nerve, it

sends two groups of short ciliary nerves, one above and the other below the optic nerve, to pass forward in grooves on the inner surface of the sclerotic coat, and to supply the choroid, iris, ciliary muscle, and cornea. The short nerves comprise three sets of fibers (Piersol):—

(*a*) Sympathetic fibers to the walls of the blood-vessels and the dilator muscle of the iris.

(*b*) Fibers supplying the ciliary muscle and sphincter muscle of the iris.

(*c*) Trigeminal fibers which transmit sensory impulses from the interior of the eyeball, in conjunction with the long ciliary nerves.

Thus, there will be seen to exist an anatomic basis for the following conditions:—

1. Irritation of the nasal and septal terminal branches of the ophthalmic.
2. Irritation of the twigs to the frontal, ethmoidal, and sphenoidal sinuses.
3. Irritation of the iris and anterior chamber.
4. Irritation of the conjunctiva, lachrymal caruncle, and sac.
5. Irritation of the integument of the nose from tip to root.
6. Irritation of the scalp back to the lambdoidal suture.
7. Spasticity of the affected musculature by reason of the intimate relation with the seventh nerve.

(*To be concluded in the April issue.*)

ANGINA PECTORIS: ITS CLINICAL PHYSIOLOGY.

By GEORGE O. JARVIS, M.D.,

ASHLAND, ORE.

The phenomena which accompany an attack of angina pectoris have received but little accurate study, probably because at the time the patients are seen they are under such stress that definite action is demanded rather than deliberate consideration. James Mackenzie, of London, has given more attention to the physiology and pathology of the anginal attack than any other writer, and I have availed myself of his works to check and corroborate my own attempts to study and treat anginas.

Occlusion of a large branch of the coronary artery leads to a rapid fall of blood-pressure and causes the heart muscle to pass into a state of fibrillation.[1] According to Osler, in all fatal cases of angina pectoris there is chronic endarteritis with narrowing of the aortic opening of the coronary vessels, this probably explaining the sudden death of patients whose coronary arteries are diseased. Fibrillation is explained by Starling as being the result of a block produced through interference with the nutrition of a considerable part of the heart wall. The same condition can be produced by freezing the apex of the ventricle—a block being thus caused—or by stimulating the surface of the

[1] Starling: "Textbook of Physiology."

ventricle at a rate greater than that at which the ventricle as a whole can respond.

That the coronary arteries of such persons do not furnish a sufficient blood supply to the heart muscle may be accepted as true; but this does not take into account the fact that vagal tone is progressively exhausted during the progress of the attack, and that it is found to be considerably less than normal in the interval between attacks. Exhaustion of vagus and muscle tone explains why very low blood-pressures are sometimes encountered at the close of a paroxysm.

Mackenzie states that angina pectoris can occur when the excitability, rhythm, and conductivity of the heart muscle are unimpaired; but that the tone is invariably impaired. This can be demonstrated by the method of Dr. Albert Abrams, of San Francisco, which consists in noting the amount of pressure at the level of the seventh cervical vertebra which will inhibit the radial pulse. The pressure required to produce this effect is normally about 10 kg. In hypotonia the pulse can be inhibited by much less pressure, sometimes by as little as ¾ kg. This is true even when the size of the heart is not at the time greatly in excess of the normal.

If the cause of angina were only a mechanical obstruction at the aortic end of the coronary arteries, then measures directed to improve vagal tone would fail to relieve the pain; nor could we understand why psychic disturbances should be even more efficient in precipitating an attack of angina than physical exertion. Emotional disturbances as well as muscular activity set free in the blood an excess of epinephrin,[2] a substance which decreases vagus tone. A practical application of this fact is the use of epinephrin hypodermically to cut short an attack of essential asthma. It is known that essential asthma is associated with vagal hypertonia, and that in susceptible individuals an attack of asthma may be precipitated by the induction of hypertonia of the vagus.[3]

In the course of my observations it was found that very light pressure at the level of the seventh cervical vertebra is sufficient to inhibit the pulse of patients just after an anginal attack has passed, and that, while the tone of the vagus is improved in the interval between attacks, it is still deficient.

Pain is one mode of expression of an exhausted heart muscle. The pain due to cardiac dilatation is of the same character as that due to distention of any other viscus, *e.g.*, the urinary bladder, gall-bladder, stomach, or intestines. That the pain of anginal paroxysms is caused by overdistention of the heart I have no doubt, as cardiac dilatation could be positively demonstrated in every case examined, and relief of the pain coincided with regression of the distention. In every patient there was auricular fibrillation and, at some time during the progress of the attack, an irregular ventricular beat with evidences of heart block.

Cutaneous hyperalgesia in typical angina pectoris is found in areas supplied by the second, third, and seventh cervical nerves and by the first,

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[2] Sajous: "Internal Secretions."

[3] Abrams: "Spondylotherapy."

second, third, fourth, and fifth thoracic nerves, *i.e.*, over the skin of the side of the neck above the clavicle, over the second to the fifth ribs anteriorly, and over the inner side of the left arm. The skin over the side and front of the neck is supplied by the second and third cervical nerves, which are connected with the sympathetic nerves to the heart from the superior cervical sympathetic ganglion. The skin supplied by the first to fifth thoracic nerves is made hypersensitive through a similar mechanism; the segment of the cord in this region is irritated by continually recurring stimulation of the afferent sympathetic nerves of the heart, the so-called "summation of stimuli" of Mackenzie taking place.

The pain of angina is due to a viscerosensory reflex caused by attempts of the heart to empty its chambers of an accumulated and excessive amount of blood which stretches its walls and embarrasses its functions. The heart cannot pass into a state of prolonged contraction (tetanus) because, as soon as it contracts, its contractile function is in abeyance and it automatically relaxes into diastole.

The following signs were noted during an attack of angina pectoris typical of those on which this paper is based:—

The patient was a woman of 72 years, 5 feet 1 inch in height, weighing 100 pounds. There was slight pulmonary emphysema, marked visceral ptosis, constipation, and indigestion. The urine showed ¼ per cent. of albumin, together with fatty casts, and had a specific gravity of 1.015 to 1.020. The amount in twenty-four hours was 25 to 30 ounces. The case was diagnosed by two other physicians as angina pectoris, of which a number of attacks have been experienced during the past ten years. These attacks follow mental or physical exhaustion, and are sometimes preceded by premonitory dizziness. The onset is sudden; the patient falls to the ground and fears to move lest she die. There is acute, sometimes agonizing, pain in the left arm and shoulder. The lips become swollen and dusky, the face drawn, and great dyspnea, with distention and pulsation of the veins of the neck, ensues. The liver is enlarged and may be felt to pulsate. There is pain and oppression in the left chest, with a feeling of weight and a choking sensation in the throat. The pulse increases in rate until the latter has reached 140 to 150 per minute.

After the attack has progressed for a short time the skin and muscles over the left chest, the inner side of the left arm, and the left side of the neck become painful and tender to pressure. The blood-pressure is high. In one attack it was, when first taken, 220 mm. Hg; it then dropped to 215, rose again to 220, and once more dropped to 210, averaging for the first half-hour about 215. Just after the attack the blood-pressure was 155, and the pulse, which was the more frequent the higher the blood-pressure, and ran from 120 to 140 when the blood-pressure was at its highest, dropped to 82 per minute. During the period in which the heart was beating 140 to the minute there would be an occasional slow ventricular beat, though the auricle was in fibrillation from the beginning of the attack to its termination.

The transverse diameter of the heart, which was 18 cm. when the patient was seen on the day after an attack,—the pulse rate being 90 per minute,—was considerably greater during the paroxysms, the organ dilating till it seemed to fill the entire chest with irregular, heaving waves of pulsation.

Heart block and irregular heart were found in all cases I examined, and in one case which I saw about a year ago the pulse was so slow as to lead

me to believe there was a "spasm of the heart" or "spasm of the coronary arteries," "spasms" which I now believe to be non-existent. Examining the same patient during a subsequent attack it was found that the auricle was enormously dilated and in a state of fibrillation. The ventricle was also dilated, but not to the same extent as the auricle. The pulse was generally rapid—110 to 125 per minute, but showed periods of lower rate—60 to 80.

It was observed that the cardiac irregularity increased and decreased *pari passu* with the increase and decrease of the dilatation, so that there was a relation between the degree of distention of the heart and the degree of cardiac irregularity.

When it was attempted to reduce the cardiac dilatation by concussion at the level of the seventh cervical vertebra according to the method of Dr. Albert Abrams, the concussion was found to produce much less effect in proportion than the same amount of concussion would do in patients whose hearts were dilated, but who were not at the time in an anginal paroxysm, or in the same patients during the intervals between attacks. This also demonstrates the loss of tone in the nerve-muscle mechanism in these cases.

The woman whose case has been described required morphine in doses of ¼ grain (0.015 Gm.), repeated two or three times, to relieve the pain in the arm and chest during the more severe attacks, and even with this amount pain lasted for some time.

Concussion at the seventh cervical vertebra practised during the attack reduced the diameter of the heart by 5 cm. and that of the aortic bow by 4 cm. on two separate occasions, with relief from the pain in about ten minutes; the patient soon fell asleep without the use of any hypnotic. Concussion gave more prompt and marked relief from pain than morphine. Concussion alone was not as efficient as concussion combined with a hypodermic injection of $\frac{1}{10}$ grain (0.0065 Gm.) of pilocarpine.

Morphine should be employed with great care in these cases, as its effect is to deaden the receptivity (sensibility) of the reflex centers which preserve heart tone, and an overdose may and has caused sudden death from unrestrained distention of the heart or aorta. Atropine, hyoscine, and other substances derived from the belladonna group are absolutely contraindicated, because their effect is to dilate the heart and aorta and to decrease their tone. The much-used combination of morphine, cactine, and hyoscine, so frequently serviceable in cases of a different nature, should by no means be employed if a loss of vagal tone is suspected.

Pain and tenderness, which often persist after the attack, are to be relieved by freezing at the level of the cord, which is connected with the sympathetic nerves of the heart. This maneuver is serviceable also to relieve similar pains encountered after an appendiceal or gall-stone attack and in which the portion of the cord connected with the sympathetic—afferent nerves supplying the viscus in question—has been so greatly and so long irritated that it has become hypersensitive and does not recover upon cessation of the irritation.

CONCLUSIONS.

1. All cases of angina pectoris which I have had the opportunity to examine have shown marked dilatation of the heart and aorta with auricular fibrillation.

2. The cause has seemed to be arterial disease with high blood-pressure and blocking of the coronary arteries. Associated with this is vagal hypotonia, which becomes more marked with the progress of the attack.

3. The blood-pressure is high at the beginning, but sometimes drops to less than 100 mm. Hg at the close. During the attack there are marked variations in the blood-pressure, according as the heart is gaining or losing in its struggle to compensate.

4. The pains of angina pectoris are due to a viscerosensory reflex, and may be relieved by measures which will increase the tone of the neuromuscular apparatus of the heart and aorta.

5. The most rapid and efficient method of treatment is concussion (or sinusoidalization) at the level of the seventh cervical vertebra in conjunction with the use of some drug, such as pilocarpine, to aid in the increase of vagus tone.

6. True angina pectoris differs only in degree from the less grades of cardiac embarrassment, such as the so-called "pseudoanginas."

Cyclopedia of Current General Literature

Albumin in Urine, Test for.—The test described by the author is asserted by him to be equal in delicacy to any other and to have certain features which make it superior to them for routine use. The following solution is employed:—

Picric acid	5 parts.
Citric acid	10 parts.
Sodium chloride	100 parts.
Distilled water	1000 parts.

Technique.—Place 2 or 3 c.c. of the reagent in a test-tube. Filter the urine until it is perfectly clear. Then allow urine very gently to float upon the surface of the reagent in the inclined test-tube. Albumin will show as a white zone at the line of contact of the two amber fluids, which are practically isochromic.

Advantages.—(1) The white ring is shown very clearly. (2) The reagent contains no chemicals which react with urinary pigments, bile, etc.; therefore, no color zones are formed which might hide a small amount of albumin. (3) The heavy specific gravity of the reagent—1065—prevents ready mixing of the urine and the reagent, so that, should albumin be present, it is not apt to be diffused and overlooked. (4) The reagent keeps indefinitely. (5) If spilled, it does no damage to clothing or fabrics, an advantage not possessed by nitric acid. (6) Boiling produces no change, nor is it dangerous; in cold weather, with a cloudy urine from phosphates which the filter does not remove, boiling the reagent first is a

distinct advantage, as the hot reagent restores the clearness to the urine as the fluids come into contact. (7) The reagent does not throw down crystals of salts of urea or nitrogenous substances in concentrated urines. A. E. Osmond (Lancet-Clinic, December 13, 1913).

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Ankylostomiasis, Treatment of.—From a study of 70 cases as to the results of treatment, it became evident to the author that a point of great importance is the percentage of hemoglobin in the blood. If it is in the neighborhood of 60, with suitable treatment the ova will disappear in the course of a few days. With a percentage of 45 to 55, treatment will be more difficult. Anything below 40 per cent. will indicate that great patience will have to be exercised before recovery can take place; it will not be a question of weeks, but of months. The general condition improves with rest and diet, and, as a rule, the edema soon disappears and the patient feels better, but the ova, though decreasing in number, quickly at first and then more gradually, do not disappear entirely for months, while the hemoglobin index remains persistently about its original level. It appears to be possible that, after all the worms have been killed and expelled, ova may still linger about the intestine. Or, the embryos may not have completed their circuit from the skin to the intestine at the commencement of treatment, and fresh invasions may continue to reach the bowel by way of the trachea and esophagus for some time after. One point having a bearing on the difficulty of treating these cases is the presence of a thick layer of mucus in the upper part of the intestine in severe cases. This must help to protect the worms against the anthelmintic. The subsequent treatment, after one has gotten the worms largely if not entirely expelled, requires great patience.

From recent results the author has come to the conclusion that betanaphthol in 30-grain doses given the first thing every morning is likely to prove more effectual than eucalyptus or thymol. The necessity for starving patients while the treatment is being carried out is by no means evident; indeed, in bad cases it may even be harmful. There will not be much food in the upper part of the small intestine five or six hours after an ordinary meal, so that if the drug be given early in the morning there is no necessity for starvation. It is true that large doses of these drugs given frequently are apt to irritate the mucosæ, but that is no reason why one should refrain from employing them in this way. Energetic treatment is needed, and the author has never seen any ill effects follow. R. D. Keith (Lancet, October 18, 1913).

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Bone and Joint Tuberculosis, X-ray Treatment of.—Experimentally, application of the X-rays to tuberculous foci causes a degenerative process in the tubercle cells and an inflammatory process in the surrounding tissues. The author does not believe that the tubercle bacilli themselves are destroyed by them. Useful therapeutic results, however, are to be obtained. In employing this treatment the skin must be protected either by aluminum or thick leather, so that only the hard rays will penetrate. Among the author's patients, chil-

dren less than 5 years old were not rayed. In older children the undiseased epiphyses were avoided, but it seems to the author that surgical procedures in the vicinity of an epiphysis involve more danger of a disturbance of growth than the X-rays.

Good results were obtained whether the synovia were involved or not, but the best effect was noted in tuberculous fistulæ and in tuberculosis with secondary infection. The part was exposed from all sides to an erythema-producing dose, and three weeks then allowed to relapse before repetition. The joints which healed under the X-rays showed but very slight limitation of motion, and the author is certain no injury was done to the epiphyses. He warns, however, about raying abscesses and fungous conditions, with skin reddened and about to give way, on account of the danger of necrosis. Furthermore, orthopedic and surgical measures must not be omitted. Among the 18 cases which the author treated, a number had been for years refractory to orthopedic treatment, yet healed quickly under the X-rays.

In a 16-year-old girl suffering from tuberculosis of both feet, the right elbow, and the fourth finger of the left hand, only the left foot and diseased finger were rayed. The sinuses in the foot disappeared after two months and the one in the finger after five months, and the finger became useful again; the untreated foot and elbow, however, remained unchanged. F. von Schede (Zeitschrift für orthopädische Chirurgie, Bd. xxxi, Ht. 3-4, 1913). * * *

Cutaneous Epitheliomata, Sunlight Treatment of.—The author calls attention to an inexpensive and efficient method of treating small superficial epitheliomatous growths that may be employed by those who are not equipped with X-ray apparatus or the prohibitively costly element, radium. It consists in the use of concentrated sunlight, focused on the growth by means of an ordinary magnifying glass.

For a number of years he has found this treatment invariably successful, chiefly in the obstinate ulcerative patches on the face or nose that repeatedly shed their scabs, only to leave a raw and bleeding base; which never heal under ointments, powders, etc., and which recur with ever-increasing extent year after year. These growths are usually of moderate size, and always malignant.

The technique used is to focus the clear sunlight directly on the sore for ten or fifteen minutes at a sitting. If a scab is present, the author concentrates the rays on it till the patient complains of the burning, then quickly lengthens the focus so as to cover with the rays an area ⅛ inch or more beyond the scab. Every few minutes he induces the burning again for a second and then applies the rays more mildly. After about ten minutes' treatment, the scab will look darker, and during the next few days will become more prominent and loosened. Treatment should be given every day or two till the scab may be easily removed, leaving a raw, bleeding ulcer. Then is the time for a powerful application of the rays. First apply a few granules of cocaine in powder directly to the raw sore, and, after three or four minutes, a treatment so strong as almost to cauterize the base of the ulcer may be borne, to be alternated with continued

milder applications for about fifteen minutes. Milder treatments thereafter, at intervals of three to seven days, through the scabs or immediately after their shedding, will usually complete the cure within three to six weeks. The scabs gradually become thinner and more superficial, and the sore bleeds less after their removal. At last a healthy, permanently normal skin is left, with scarcely a faint scar. Rarely more than 8 to 15 treatments are required to get these satisfactory results. Powdered talcum, boric acid, or bismuth may be dusted over the scab at any time for cosmetic purposes or to dry moisture. Seven cases illustrating the satisfactory results claimed are reported. H. H. Seelye (New York Medical Journal, February 7, 1914).

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Dysmenorrhea, Intranasal Treatment of. — The so-called "genital spots" in the nose are the tuberculum septi and the anterior portion of the inferior turbinate on either side. At menstruation these swell, bleed easily, are sensitive to the touch of a probe, and are slightly cyanotic. In 93 cases of dysmenorrhea the author used the galvanocautery over or applied trichloracetic acid to these spots. The results obtained with the acid were so permanent, and the treatment so free from the danger of forming synechiæ, that in the latter case of the series all patients were treated with the acid. A mild solution of cocaine was applied just beforehand. The slough that forms disappears in about five days, and another application may then be made; 4 applications were made between periods. The patient was requested to report the results of her next menstruation. If entirely favorable, two more reports were requested, and if these remained as favorable nothing further was done. Where relief was slight or nil, 4 more applications were made between menstruations before abandoning the treatment.

The patients were all young women, married and single, in whom all recognized means for the relief of dysmenorrhea had been previously employed and whose pelvic organs presented no organic lesions. One group stood out prominently: those characterized by premenstrual headache, nausea, and colic at the onset of the flow. This symptom-complex was completely relieved. Brettauer, with the author, considers this treatment of great value and one which should be resorted to in all cases of dysmenorrhea in which pelvic disease is absent. Of 81 cases sending in subsequent reports, no relief was obtained in 19, 14 were improved, and 48 were cured. Three were treated because of amenorrhea lasting for from three to twelve months, and in each the flow became regular. Emil Mayer (Journal of the American Medical Association, January 3, 1914).

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Erysipelas, Treatment of.—While the author not infrequently prescribes pyramidon as antipyretic in various febrile disorders, he has never seen it so useful as it proved to be in erysipelas. His experiences with it in 20 patients with erysipelas have been uniformly favorable; he orders it regularly in these cases. Producing a marked diaphoresis, it lowers the temperature to normal or even below it, and restlessness or delirium, if also

present, yield simultaneously. The eruption assumes a less bright red color and ceases to spread, and the general condition rapidly improves. Apparently, in the process of producing diaphoresis, the drug causes elimination of a considerable proportion of erysipelas toxin. Diuretic beverages were also given in nearly all cases.

Locally, the following ointment was used:—

℞ Phenolis,
Camphoræ pulveris, āā gr. xv (1 Gm.).
Adipis lanæ hydrosi,
Petrolati, āā ʒss (15 Gm.).
M.

In none of the patients thus treated were there visceral or meningeal complications. The efficacy of the pyramidon seemed proven by the fact that in 2 cases in which its use was temporarily stopped an exacerbation followed and the erysipelatous process began to spread again. A. Satre (Journal de médecine de Paris, October 11, 1913).

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Eye, Treatment of Pneumococcus Infection of.—A sufferer from long-standing dacryocystitis developed ulcus serpens of the cornea of the right eye. There was intense epibulbar and ciliary injection, with conjunctivitis. The ulcer appeared progressive toward the inner and lower part of the cornea, and was sloughy on its surface. The cornea was hazy throughout, and there was a distinct hypopyon. The ulcer was bathed with a 1 per cent. solution of ethyl hydrocupreine for one-half minute every hour. This was done for six hours of the first day, and twelve hours on the next. Just previous to using the drops the sac was expressed, and the conjunctiva thoroughly cleansed with boric acid. On the morning of the second day the hypopyon had vanished, and the cornea, with the exception of a minute spot on the surface of the ulcer, was transparent. On the third day the cornea was practically normal in appearance. On the seventh day the sac was removed and recovery ensued. Ethyl hydrocupreine has been proven by Morgenroth to be practically specific against the pneumococcus, and he strongly recommends its use in all pneumococcal ulcers. Alfred Wiener (Medical Record, January 17, 1914).

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Fixation Abscesses, Treatment of Infections by.—The cases in which this measure may usefully be employed include puerperal septicemia, infectious pseudorheumatism, pneumonia, appendicitis, typhoid fever, and similar states. The method is as follows: Two c.c. of pure oil of turpentine are injected under the skin in the gluteal region. In a case of appendicitis it is important to keep as far away from the abdominal wall as possible, in case an operation becomes necessary later. Rigorous asepsis is necessary in making the injection. A sharp pain will follow at once, but this may be immediately relieved by the application of a hot fomentation. At the end of three days, or of four at the most, the abscess will have formed sufficiently. There is no need of a large collection of pus for the production of a phagocytosis. The author has often noticed a lowering of the temperature before the formation of the abscess. A small incision, from 2 to 5 cm. in length, should then be made to evacu-

ate the pus, but the abscess must not be drained. Twice a day a Bier cup should be applied. At the end of a week the abscess will be healed and the patient cured.

The author reports cases of rupture of an infected extrauterine pregnancy, lymphangitis of the arm followed by bilateral phlegmasia alba dolens, and typhoid fever with severe septicemic symptoms, in which he used the measure, and in both these and 15 other cases excellent results were obtained. The measure should be employed not merely in exceptional cases, but in any case in which a patient with an infection appears to be taking a turn for the worse. It does not possess any of the dangers which have been attributed to it, causes but little pain if given correctly, and the assistance of a surgeon is not necessary. De Lostalot (Lancet, October 18, 1913).

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Gall-stones, New Sign of.—Attention is called by the author to the fact that, during application of vibratory massage over a gall-bladder containing gall-stones, subcostal tenderness and stiffness are especially marked. Gall-stones irritate the gall-bladder and give rise to more or less congestion, which extends to the adjacent parts. The natural result is stiffness and soreness, although these may be very slight. When a vibratory machine is put into action over the gall-bladder region at about the eighth to the eleventh ribs it is easy to elicit these symptoms, even if ordinary palpation does not detect them. The tenderness developed by vibration may be so slight that only a comparison with the corresponding region on the left side will reveal it; but if there is any congestion or spasticity of the local tissues, vibration, with the resulting muscular contractions, will rarely fail to bring out the comparative increase of tenderness. The author used an olive-shaped vibratory point. He has yet to find a case in which vibration failed to indicate the presence of gall-stones in the manner referred to. R. Hogner (American Medicine, February, 1914).

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Gastric Ulcer and Hyperchlorhydria, Diet in.—The intervals between feedings should be as long as possible, food being given preferably not more than two to four times a day. The diet should be as little appetizing, tempting, and palatable as is practicable. Soups, broths, and other preparations of meat extractives should be forbidden. Meat is to be excluded and protein food reduced. Coffee and tea should be avoided. Water should not be drunk in large amounts, not over 250 c.c., or 8 ounces, at one time. Alkaline drinks, however, may be more freely taken. Carbohydrate food is permissible. Oil should be taken before meals, or the diet should contain a large amount of fatty material.

In using vegetable oils, such as olive oil, almond oil, cottonseed oil, the best results seem to be obtainable by giving it in quantities of an ounce or more a half-hour before meals; with it is given a simple carbohydrate-fat diet. When pure oil is distasteful, it may be given made up in mayonnaise dressing, to be generously used.

The use of cream as the sole or chief ingredient of the diet has also found favor. One quart (4 glasses) of cream a day yields about 1800

calories, which alone is sufficient for many small-sized persons leading the quiet lives of invalids. It contains only about 25 Gm. of protein; but 20 Gm. more of protein would be furnished by the addition of 600 c.c. of milk or 220 Gm. (6 slices) of bread, or 230 Gm. (5 tablespoonfuls) of oatmeal gruel (cooked with milk), or 3 eggs. The richness of the cream in fat effects a marked inhibition of gastric secretion. It may cause acid gastric indigestion from the splitting of its fat by the lipolytic action of the gastric juice; but in the author's experience this effect usually disappears after a few days. If not tolerated in full strength, the cream may be given diluted with an equal or greater amount of milk. The use of corresponding amounts of ice-cream is a useful variant method. Among the 26 cases of gastric ulcer thus dieted by the author, some marked cases, including one with profuse repeated hemorrhages, progressed to good recovery, though two or more months of treatment, with many weeks in bed, were sometimes required to effect this result. The method is adapted to ambulant treatment, and seems rational for simple hyperchlorhydria as well as ulcer. It was also found of prophylactic service, dyspeptic symptoms suggestive of recurrence of ulceration usually promptly subsiding after a few days' resort to cream diet. J. B. Nichols (Journal of the American Medical Association, January 3, 1914).

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Hernia, Inversion of the Hernial Sac in Large Ventral.—In patients who take the anesthetic very poorly, maintaining a disagreeable condition of prolonged and straining expiratory efforts, which force the abdominal viscera into the hernial sac under tremendous pressure, the author advocates the performance of the "inversion" procedure. The details of this method are described as follows: Dissect the skin from the sac and the skin and fat from the fascia for a distance of from 1 to 2 inches beyond the margin of the hernial orifice. Whether the skin shall be entirely removed from the sac depends upon whether the sac is to be inverted entire or not. In but one of the author's cases was it not necessary to open the sac, in order to deal with some attending complication. In these instances more or less skin was removed by the usual elliptical incisions, with the redundant portions of the sac itself.

After the complications have been dealt with and the sac (peritoneum and thin fascia) has been sutured with No. 2 plain gut, doubled, the inversion of the hernia and coaptation of the margin are carried out. For this purpose two rows of sutures of heavy kangaroo tendon are used. Both rows are placed mattress-wise with deep and wide bites in the external fascia, the two rows "breaking joints" with each other. Retention sutures of either bronze wire, silkworm, or chromic gut are used to take the strain off the mattress sutures. The wire is preferred in the large hernias, and the gut may be used in the smaller ones. These sutures are placed in the figure-of-eight manner and brought out through the skin at a distance of from 2 to 4 inches from the skin incision, where they are tied firmly over rolls of gauze or large rubber tubing (quill suture).

A drain of rubber tissues should be

inserted before the skin is closed with silkworm or plain gut. This drain will not be needed more than two days in the small hernias and from five to seven in the larger. The utmost care must be used before, during, and after the operation to preserve complete asepsis.

In these enormous hernias, with multilocular sacs, with adherent viscera and similar complications, the saving of time secured by not having to dissect out the necessary flaps is very considerable, while the method of suturing is so simple and easy that it adds to the celerity of the operation. The danger of perforating the intestines in introducing the sutures may be entirely avoided, if through small incisions in the sac a finger is inserted beneath it and the suturing carried out under its guidance. No disturbance followed from the introduction of the large mass of sac into the abdominal cavity. Nor could any tendency to obstruction of the intestines be noted, the bowels acting spontaneously on the second or third day, even in the largest hernias. Primary union and cure of the hernia resulted in each of the author's 7 cases thus operated. I. S. Haynes (New York State Journal of Medicine, December, 1913).

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Hexamethylenamine, Liberation of Formaldehyde from.—The phloroglucin test is the most delicate and most useful test for free formaldehyde. The reagent used consists of phloroglucin, 0.1 Gm., dissolved in 10 c.c. of 10 to 20 per cent. sodium hydroxide. When first prepared the solution acquires a bluish-violet color, but on standing becomes entirely colorless or with at most a yellowish tinge. The reagent may be used freshly prepared, since the violet color does not interfere with the red of formaldehyde. The test is performed in the cold or at ordinary room temperature by the direct addition of about 0.5 c.c. of the reagent to about 1 to 2 c.c. of the fluid containing formaldehyde. A deep bright red appears instantaneously with higher concentrations of formaldehyde, but with lower concentrations it requires about one-half to one minute for the color to reach its maximum intensity. The color persists for at least five minutes with dilute solutions, and much longer with concentrated formaldehyde. The test is directly applicable to all body fluids except whole blood and bile. The hemoglobin of fluids containing a trace of blood (enough to give a red tint) is immediately reduced by the alkali of the reagent, the solution assuming a yellowish color, and does not interfere with the formaldehyde reaction. The reagent added to water alone gives a clear, colorless solution.

Alkalies prevent, while acids facilitate, the liberation of formaldehyde from hexamethylenamine in all body fluids. Hexamethylenamine itself is not bactericidal. Liberation of formaldehyde from hexamethylenamine depends on the excess hydrogen ion concentration of the solution above the neutral point.

Previous investigations leave us in doubt as to the behavior of hexamethylenamine in the body. After administration, hexamethylenamine is present, but does not liberate free formaldehyde in the blood, cerebrospinal, pleural, pericardial, and synovial fluids, the vitreous and aqueous

humors, and the urine when truly alkaline. Formaldehyde is liberated in urine which is truly acid, and in the acid gastric contents. Administration of monosodium phosphate with hexamethylenamine renders the urine acid and facilitates the liberation of formaldehyde. Administration of alkali with hexamethylenamine renders the urine alkaline and inhibits the liberation of formaldehyde. The beneficial therapeutic effects of hexamethylenamine depend on the liberated formaldehyde. Such effects are to be expected principally, if not always, in acid urine only. It is irrational to prescribe alkalies (bicarbonate and citrate) with hexamethylenamine. P. J. Hanzlik and R. J. Collins (Archives of Internal Medicine, November, 1913).

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Hexamethylenamine, Urinary Antiseptic Value of.—Formaldehyde is a weak and relatively slow germicide, but even in high dilutions exerts a powerful inhibitory influence on bacterial development. A dilution of 1:16,000 is totally inhibitory to *B. typhosus* for twenty-four hours, and 1:6000 is completely germicidal at the end of that time. A dilution of 1:30,000 definitely restrains the growth of the organism, but a dilution of 1:40,000 has no apparent effect.

Of 23 urines obtained by catheterization of the ureters after hexamethylenamine administration, only 5 showed formaldehyde, and these had only a 1:60,000 formaldehyde content. The 18 negative urines all gave a positive test for hexamethylenamine. The latter, as it is excreted from an alkaline blood, does not remain at the level of the kidney long enough to give good conversion to formaldehyde, and even with high acidity and high concentration the formaldehyde at this level is seldom enough to furnish antisepsis.

Only 4 of the author's 116 cases, however, failed to show formaldehyde in the bladder, but only 8 cases, or about 7 per cent., revealed formaldehyde in the germicidal strength (1:7000), and 5 of these had been given acid sodium phosphate. Fifty-five per cent. of the cases gave at some one examination a 1:30,000 test or better.

A formaldehyde content of antiseptic value cannot be expected with a urinary acidity below 2 c.c. of tenth normal sodium hydroxide for 10 c.c. of urine (using phenolphthalein as indicator).

Feeding a patient acid sodium phosphate, boric acid, benzoic acid, or salicylic acid will increase urinary acidity where it is low and very definitely increase the amount of formaldehyde in the urine. The effect of any of these acid-producing drugs will wear off after a time. When this occurs one can again raise acidity by substituting one of the other drugs in its place, and by thus alternating the use of the drugs acidity may be maintained for some time in some cases, but not satisfactorily in all.

It is best not to give these drugs *with* the hexamethylenamine.

In cases of hyperacidity or poor gastric motility there is sufficient conversion of hexamethylenamine to formaldehyde in the stomach to considerably lower the formaldehyde content in the urine. Hexamethylenamine may be given in salol-coated pills in cases of gastric irritability.

Formaldehyde appears in an acid

urine after the ingestion of an average dose (15 grains) in from twenty to thirty minutes, and will have disappeared in from eight to sixteen hours. An eight-hour interval of administration will give good results in routine use, although a higher concentration is obtained with a more frequent introduction.

The dilution of the drug on excretion largely influences the amount of it that is subsequently converted, as, the higher its concentration, the more readily will it be broken down. A polyuria, through the effect of dilution, will largely offset the advantage of large doses.

Disease of the kidney has no influence of the formaldehyde content in the urine. At the level of the kidneys hexamethylenamine in doses of 15 grains three times a day has no antiseptic value. Formaldehyde is present in the bladder urine in some amount in practically every case receiving 15 grains of hexamethylenamine by mouth three times a day, but this dosage is too small to yield a reasonable antiseptic benefit in every case. F. Hinman (Journal of the American Medical Association, November 1, 1913).

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Hirsute Skin, Transplantation of.—The author reports a successful case of transplantation of hair-bearing skin. The patient was an officer who had an ugly, star-shaped scar, 10 cm. by 5 cm., in the temporoparietal region, which was quite hairless. A flap of hair-bearing skin was transferred to his head from that of another individual. The two patients were anesthetized together, and their heads well washed with soap and water. The scarred portion of the officer's scalp was cut out down to periosteum, and was replaced by a piece of the donor's scalp. The wounds healed by first intention, and the hair remained on the graft. The author ascribes the failure of previous attempts to the use of antiseptics, such as iodized benzine, on the skin. In animals the difficulty lies in maintaining the necessary continuous contact of the parts. Victor Perimoff (Zentralblatt für Chirurgie, September 13, 1913).

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Hodgkin's Disease, Benzene Treatment in.—Report of a case of Hodgkin's disease with marked enlargement of cervical lymph-nodes, epitrochlear nodes the size of a robin's egg, and lymph-nodes in the groin only fairly enlarged. The blood showed 5,000,000 reds with 90 per cent. hemoglobin. The leucocytes numbered 7000, with practically a normal differential count.

The patient was treated with the Röntgen ray for four weeks. The lymph-nodes, with the exception of the epitrochlears, gradually became smaller, but a month after the treatment was stopped the lymph-nodes were larger than before treatment. Examination later showed lymph-nodes almost encircling the neck in front, and extending out beyond the lower jaw at the sides. The epitrochlears were the size of a walnut; nodes in the groin were somewhat enlarged, and there was some enlargement of the axillary nodes, as well as a number of enlargements behind the shoulders and in the lumbar region. There was marked cough, due to pressure on the bronchi by lymph-nodes.

Shortly after, the patient was put

on benzene, in the dose of 5 minims three times a day at first, increased to 10 minims. This dose was continued for six weeks. Two weeks after the benzene had been begun, the lymph-nodes everywhere began to diminish in size, and they continued to get smaller even after the drug was stopped. Examination some months later showed barely palpable lymph-nodes in the neck. The epitrochlears were smaller than a butter-bean, there was no enlargement in the groins or axillæ, and the subcutaneous lymph-nodes on the back had entirely disappeared. The patient was working hard as a farmer. G. B. Lawson and E. A. Thomas (Journal of the American Medical Association, December 13, 1913).

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Lipoid Membranes, Artificial.—In the attempt to explain certain peculiarities of cellular permeability the author was led to undertake, with Fouard, a study of artificial lipoid membranes and their influence on the absorption of organic and inorganic substances into cells. Admixture of castor oil and lecithin with collodion was found not to alter, qualitatively, the permeability of the collodion to salts, which seem to pass through the latter just as though nothing had been added to it, whereas water is always excluded, as by ordinary collodion. It seems probable, then, that vegetable and animal membranes contain something besides fatty substances and lecithin to impart to them their property of impermeability to salts, *i.e.*, that a third substance is present. This substance the author has found to be cholesterin. When to the collodion containing castor oil and lecithin is added cholesterin, results are entirely different. Sugars no longer diffuse through, the membrane has become impermeable to salts, and, indeed, osmosis is wholly arrested, as is easily shown by immersing in pure water a saccular membrane of cholesterinated collodion in which has been placed a strong solution of sodium chloride or sugar—no osmotic pressure develops. Now, if it were found that hypnotic drugs readily passed through such membranes, striking confirmation would be afforded to the theories of Overton and Meyer, who explain the passage of hypnotics through the cell membranes by their solubility in lipoids, independently of all physical action. This the author found actually to be the case. All the hypnotics studied passed through the membranes with the greatest ease and generally with a rapidity proportionate to their narcotic action. The drugs experimented with were ethyl carbamate, veronal, aponal, hedonal, sulphonmethanum, tetronal, chloralose, isopral, and neuronal. Far behind the true hypnotics in activity of diffusion came sodium salicylate, hexamethylenamine, urea, and antipyrin. The last-named diffused but very little, while the salicylate passed through with relative ease, even better than urea. Bidechlorochloralose, a derivative of chloralose prepared by Hanriot, was found to be both incapable of passing through the membrane and devoid of hypnotic and analgesic properties, thus clearly affording support, upon comparison with the easily diffusible and strongly hypnotic chloralose, of the author's view concerning the rôle of cholesterin in cell metabolism. Cholesterin appears as a gatekeeper of the cell, opening or shutting off access to it

under influences which it may be feasible in the future to ascertain. E. Fourneau (Bulletin de l'Académie de Médecine, December 9, 1913).

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Lumbago, Treatment of. — The salicyl compounds should be given a trial, especially at the beginning of the attack, and they will sometimes abort it. The author has seen excellent results from a single large dose of quinine—from 10 to 20 grains—administered at the onset of the affection. Fagge taught that lumbago is generally due to a hyperacid state of the urine, and there are many who still hold this opinion. The indication, from this standpoint, is to make the urine alkaline as rapidly as possible with sodium or potassium bicarbonate, or potassium citrate. Half-dram or dram doses of Rochelle salts, however, are preferable. They may be administered every hour or two until the urine is alkaline and the bowels freely moved.

Lumbago affords one of the best examples of the importance of early treatment. The attempt to "walk it off," at its commencement, may succeed if the exercise is accompanied with free perspiration, but in the author's experience those who suffer from lumbago do not perspire readily. A Turkish bath in the early stage is safer and more effective than exercise. When the affection is established, rest is imperative. Then, also, local treatment, consisting of dry cups, deep massage, and the faradic current, should be instituted; and if the salicyl compounds and their numerous succedanea have failed, successful resort may be had to iodine. This drug has been found most efficient in its combination with a vegetable protein. F. P. Henry (Medical Record, January 17, 1914).

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Ozena, Use of Sugar in.—Used in the form of a powder insufflated into the nasal cavities, sugar yields excellent results in ozena. It prevents the formation of toxic decomposition products, excites a watery secretion, and inhibits the excretion of fibrin, thus preventing the production of sclerosis and the disappearance of lymphoid tissue. For the first week or two the treatment should be carried out by the surgeon. All crusts are removed from the nose, being softened, if necessary, by means of hydrogen peroxide or a solution of sodium bicarbonate. The patient should also be taught how to use the syringe: The nozzle must be inserted into the nostril after starting the flow, and the patient should hold his head down over a bowl, taking quick breaths through the mouth. At least a pint of lotion should be used three times daily.

After removal of the crusts the mucous membrane should be massaged with a cotton-tipped probe in order to produce congestion. The nostrils are then to be packed with ribbon gauze soaked in simple syrup; the gauze packing is removed in twelve hours. This treatment is repeated on alternate days. At the end of a fortnight insufflation with powdered white sugar is commenced, and this can be carried out by the patient himself. This method, combined with the douching, is simple and entirely satisfactory. The value of sugar in other septic conditions is well known. P. A. Harry (Prescriber, January, 1914).

Picric Acid in the Treatment of Various Skin Lesions. — *Eczema.* — Better results were obtained by the author with picric acid in the acute than the chronic eczemas. Striking improvements was seen in the facial cases with profuse exudation, excoriation, and crusting. In the milder cases an aqueous solution was painted on several times daily and allowed to dry, while in the more severe cases wet dressings of picric acid were applied, held in place by a facial mask. Lessening of the itching and pain was almost immediate. Reduction in the serous exudation and softening of the crusts were equally prompt. Improvement in the induration was rapid, as was the subsequent epithelialization. Such prompt relief was not obtained by any other means.

In the subacute and chronic types of the disease, cure of the lesions was hastened materially by initiating the treatment with two or three days' application of picric acid solution, and then following with the usual ointments of zinc, tar, salicylic acid, calomel, mercury, etc.

Burns. — Results obtained in 2 severe cases showed the efficacy of picric acid in paving the way for the rebuilding of injured tissue. One case was that of a child burned to the third degree from the waist line to the toes of the left lower extremity, with only small islands of first- and second- degree burns occurring in the popliteal space, groins, and calf. Although the skin and subcutaneous tissue sloughed away from the entire left leg, exposing the bone in places around the ankle and foot, complete epithelialization was obtained without skin grafting, and normal function of the limb restored.

Intertrigo.—Picric acid solution was painted on the surfaces involved and they were kept from coming into contact with thin layers of absorbent cotton. In the more severely infected cases wet dressings were used. Cures were effected in about half the time taken in similar cases treated with ichthyol solutions.

Erysipelas.—Results in this condition were not uniformly successful, but in certain ways they were more satisfactory than those of any other method. The discomfort and pain were relieved more quickly and the edema disappeared rapidly. In several cases desquamation in cast-like masses followed the use of picric acid, leaving healthy skin beneath. A reduction in temperature in these patients was the rule, occurring with or without marked improvement in the local condition.

Herpes Labialis. — A more rapid drying of the lesion and fewer extensions of the trouble were obtained with picric acid than with any other method used.

Ringworm.—Ringworm of the scalp did not respond more rapidly than to other methods of treatment; body ringworm was more easily controlled by painting on picric acid solution than with the usual antiseptic ointments.

Psoriasis.—Immediate and constant relief from itching; otherwise no particular response.

Vaccination.—A few cases treated with applications of picric acid from the start ran a normal course, did not become infected, and showed very little local reaction. Several badly infected vaccinations treated with the acid made very rapid recoveries. H. B. Wilcox (Archives of Pediatrics, November, 1913).

Poliomyelitis, Early Diagnosis of. — Description of a hitherto unobserved preparalytic symptom consisting of a peculiar twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a very few seconds to somewhat less than a minute. The amplitude of vibration is greater than in a tremor, not so constant and long as in a convulsion, and more regular than in a mere twitching, yet it has in it some of the elements of all. It usually affects a part or the whole of one or more limbs, the face, or the jaw, but it may sometimes affect the entire body. The symptom may easily be overlooked in the beginning, as it usually lasts less than a second at that time and does not recur, unless the patient is disturbed, oftener than every hour or so. Later the duration of the spells lengthens, first to a few and then several seconds, and at the same time the intervals become shorter. The condition is often accompanied by a peculiar cry similar to the hydrocephalic. At times there is a slight convulsive movement resembling a chill, during which the child is apparently unconscious, with eyes set, for a few seconds. This short spell of unconsciousness may also occur without noticeable convulsive movements. J. A. Colliver (California State Journal of Medicine, November, 1913).

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Poliomyelitis, Epidemiology of.— The conclusion that susceptibility to poliomyelitis is comparatively rare, and that the incidence of the disease is limited chiefly by a general immunity rather than by a restricted dissemination of the virus, is reached primarily by exclusion, since no other hypothesis yet advanced satisfactorily explains the epidemiologic peculiarities of the disease. The conclusion is, however, greatly strengthened by direct evidence, viz., the demonstration of the virus in the secretions of well persons.

The greater immunity of adults to the disease may be due to a nonseptic resistance, developing naturally with maturity. Certain facts, however, suggest that the immunity of adults may be specific, *i.e.*, acquired from previous unrecognized infection with the virus of poliomyelitis. These facts are: 1. Poliomyelitis is known to occur in forms quite difficult to recognize clinically. There is reason to believe that even during epidemics the number of cases without paralysis exceeds the number of paralytic cases. The occasional development of typical paralysis without any distinctive premonitory or accompanying constitutional disturbance illustrates how insidiously the disease may run its course. 2. The perennial occurrence of sporadic cases shows that the infection is and has been endemic, at least in this country, for a number of years. 3. The spontaneous decline of epidemics in localities where only a very small percentage of the population have been attacked, and the subsequent immunity of these localities while the epidemic spreads in contiguous localities suggests that a population may be immunized by an epidemic giving rise to only one recognized case of poliomyelitis among several hundred or several thousand inhabitants. A striking illustration is the Swedish epidemic of 1911, which spared the localities chiefly affected in 1905, while attacking most severely localities imme-

diately contiguous. 4. The immunity of adults appears to be, in this country at least, relatively greater in large, thickly populated cities than in smaller towns and especially remote rural sections. In large cities cases during epidemics are confined more exclusively to children under 5 years of age, suggesting that dwellers in large cities have been more generally immunized in early life than those living in rural sections. The same conclusion is suggested by the fact that in rural districts the total incidence of epidemic poliomyelitis is characteristically higher than in large cities. 5. The hypothesis that poliomyelitis can be very generally endemic and yet often escape recognition is supported by some fairly close analogies. Typhus fever undoubtedly did exist endemically in New York and other cities for a number of years without being recognized. The same is probably true of pellagra and undoubtedly true of uncinariasis in the United States. Yellow fever occurs endemically and perennially in some places almost unnoticed, the case being apparently confined to newcomers and young children. Measles, while almost exclusively a disease of children, attacks adults and children alike when introduced into territory that has long been free from the infection. Wade H. Frost (United States Public Health Service, Hygienic Laboratory Bulletin No. 90, October, 1913).

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Psoriasis, Protein Metabolism in. —In a careful study of the protein metabolism of 8 psoriasis patients, the authors observed that on a given protein diet a psoriatic subject eliminates less nitrogen in the urine than does a normal individual on a corresponding diet. The urinary nitrogen in some of the patients reached a level lower than has ever been recorded. Patients with psoriasis exhibit a remarkable retention of nitrogen, which appears to be proportional, in a general way, to the extent and severity of the eruption present. The nitrogen is retained to a greater degree than has been observed in connection with any other condition and is, furthermore, retained with great ease even on a diet low in nitrogen and insufficient in caloric value, and one on which a normal individual would fail to maintain equilibrium.

Experiments with urea feedings show conclusively that the nitrogen retention cannot be attributed to any disturbance in the eliminative capacity of the kidneys. Patients with extensive psoriasis may lose very large amounts of nitrogen in the exfoliated scales, which consist of almost pure protein, but the retention of nitrogen in most of the cases was greater than could be accounted for by the protein lost in the scales, and it sometimes persisted even after scaling had ceased and the eruption had virtually disappeared.

A low nitrogen diet has a most favorable influence upon the eruption of psoriasis, particularly when the latter is extensive. There can be no doubt that severe cases of psoriasis improve under such a diet, almost to the point of disappearance of the eruption. Conversely, a high nitrogen diet exhibits an unfavorable influence on psoriasis, commonly causing an extension of the eruption. Whether a high nitrogen diet can stimulate an outbreak of psoriasis in

a psoriatic subject who is at the time free of the eruption has not yet been determined.

The great proliferation and exfoliation of cells by the skin in psoriasis demand a large supply of protein, which can only be procured from the lymph- and blood- streams. This protein supply may be derived from the ingested food, and a possibility exists that the great demand of the diseased skin for protein may also be satisfied by the protein reserve in muscle tissue, which thus may become depleted and later require restoration. This would explain the ready and persistent retention of nitrogen in these cases. A protracted, low protein diet may diminish the proliferative activity of the skin by diminishing the supply of the principal building material, namely, protein. On the other hand, a high protein diet may stimulate the proliferative activity of the cells by furnishing an abundant supply of the necessary protein. J. F. Schamberg, J. A. Kolmer, A. I. Ringer, and G. W. Raiziss (Journal of Cutaneous Diseases, October and November, 1913).

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Syphilis, the Noguchi Luetin Reaction in.—It is in the earlier stages of syphilis that the highest percentage of positive results is obtained with the Wassermann test, while in the later stages the lipotropic substances upon which a positive reaction depends are frequently not present in the serum, owing to fluctuations in the activity of the spirochetæ induced by treatment, or to the production of antibodies which neutralize these lipotropic substances. On the other hand, these fluctuations in the activity of the spirochetæ favor the development of the state of allergy or anaphylaxis, which must be induced before the skin will react to the injection of luetin. Thus, a positive Wassermann test indicates the presence of metabolic substances in the serum due to present or recent activity of numbers of spirochetæ on the tissues, while a positive luetin reaction is indicative of a state of hypersensitiveness to the specific proteins of the spirochetæ, induced by a period of cessation of the introduction of these proteins prior to the injection of the luetin.

The cases which reacted most intensely to the luetin in the author's series were, as a rule, those in which the Wassermann test was negative and *vice versâ*. The luetin test is valuable as a diagnostic measure in the tertiary and latent stages of syphilis, but its greatest value, according to the author's experience, appears to be in the prognosis. Among 70 cases of undoubted syphilis, practically all of which had been treated, in all but 4 either clinical evidence, a positive Wassermann test, or a positive luetin reaction showed that the syphilitic infection had not been entirely suppressed. It seemed reasonable to assume that these 4 cases had been definitely cured. A provocative injection of salvarsan, followed by the application of both Wassermann and luetin tests, is suggested as a rational means of determining whether treatment has been sufficiently intensive to effect a cure. G. B. Foster (American Journal of the Medical Sciences, November, 1913).

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Tonsillectomy, a Method of.—The writer describes a method which he

has found most efficient in a series of 250 cases. The gas and ether sequence, or ether by the open method, is used in the introduction of anesthesia. The latter is then carried on by the administration of warm ether vapor passed into the mouth through a tube attached to the mouth-gag. In this way the operation is performed without interruptions and the throat easily kept clear of blood.

In commencing the operation proper, the tonsil is seized with an ordinary tonsil forceps and drawn forward. An incision is made through the mucous membrane of the anterior pillar at its margin, to expose the capsule of the tonsil. A separation is then made between the anterior pillar and the capsule. It is carried upward over the upper pole of the tonsil and then downward between the posterior pillar and the tonsil. By the use of a blunt dissector the tonsil is entirely freed from the pillars and remains attached only by its base. A snare is then slipped over it and, following the line of least resistance, cuts through the connective tissue, uniting the capsule to the surrounding tissues. When the tonsil has been removed a gauze sponge is placed in the fossa, and pressure may be placed upon it while the other tonsil is being removed in a similar manner. Usually this pressure is sufficient to control hemorrhage. If not, the bleeding point is picked up with hemostatic forceps and crushed, or a ligature passed around it.

The operation is quickly performed, there is no danger of damaging the pillars, and the possibility of postoperative hemorrhage is reduced to a minimum, not 1 of the 250 cases presenting the slightest indication of postoperative hemorrhage. P. B. Macfarlane (Canadian Practitioner and Review, October, 1913).

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Tracheobronchial Glands, Diagnosis of Enlargements of.—In a study of 38 cases in regard to the diagnostic value of vertebral percussion in the tracheobronchial enlargements frequently met with as sequelæ of pertussis, measles, and tonsillitis and as a result of tuberculosis, the author found that in simple enlargement of these glands percussion of the thoracic vertebræ, especially above the level of the inferior scapular angles, usually affords tonal changes of real clinical value if properly interpreted. These changes, more often corroborative than primarily diagnostic, invariably should be correlated with the mural signs of the individual case.

In uncomplicated adenopathies hyporesonance with maximum tactile resistance and hyperresonance with minimum tactile resistance may have precisely the same significance. To explain this seeming paradox it is to be assumed that in the former instance the mass exerts a dulling pressure, and that in the latter it conducts the predominant tracheal tone. In glandular enlargements associated with pleuropulmonary lesions, emphysema and pleural adhesions are to be reckoned with as additional factors of hyperresonance and hyporesonance respectively.

In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect the vertebral percussion sound to a minor degree and more often produce dullness than hyperresonance. This general rule has a restricted clinical bearing in the

differentiation of adenoid and malignant tumors.

In routine examinations ordinary mediate finger percussion is preferable to instrumental pleximeter percussion in studying vertebral changes of sound. The latter method gives no surer clue to tonal changes than the bare fingers, and obviously forbids all judgment of tactile resistance. J. C. Da Costa, Jr. (American Journal of the Medical Sciences, November, 1913).

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Vaccination, Arrest of, at the Vesicle Stage.—In chicken-pox the usual eruption stops at a vesicle, which by intelligent practitioners is freely opened and the site of the vesicle dressed with antiseptics to prevent pustulation. Why should a pustule, the author asks, be necessary for vaccination, if it is not necessary for small-pox or for varicella?

Extraordinary precautions are used in securing bovine vaccine lymph to make sure that the vesicles are broken and the lymph removed before the content of the vesicle becomes cloudy. If vaccinia in the heifer is complete enough to be reinoculable from the lymph in a clear vesicle, is it not logical to conclude that vaccinia is complete in the human subject at the same stage?

The author proposes that the vaccination process should stop at the vesicle, and, in order to make sure of this, the physician should purposefully break the vesicle and treat the site antiseptically. This practice the writer has followed for nearly twenty years, with satisfaction in the knowledge that the proverbial "sore arm" is prevented and the scar of vaccinia either avoided or reduced to a minimum. Vaccination should be based upon the following technique:—

1. Clean the area thoroughly with soap and water; follow with alcohol sponging. Be sure the alcohol dries off well, so as to leave the area aseptic, but not antiseptic.

2. Vaccinate by any aseptic method; the writer usually employs the point coming with the glycerinized vaccine and the area is scarified.

3. Cover the area of vaccination at once with sterile cotton and hold in place with collodion. A shield may be used over this dressing to prevent its removal.

4. Conduct the vaccination as any other surgical case. Have the patient return on the third, fifth, and seventh days. If there are no symptoms of itching, or of pain, do not remove the dressing until the fifth or seventh day. On the day the dressing is removed, if there is no sign of vesiculation, reapply sterile dressing as before. On the seventh day, look again for the vesicles; if none, repeat dressing. Do this every two days until the tenth or twelfth day. If no vesicles show, revaccinate and proceed as before.

5. If the vesicle shows at any dressing, brush the surface with tincture of iodine, or with pure alcohol, then carefully snip the top off of the vesicle with a pair of sterile scissors. Paint the base of the vesicle with a 30-grain-to-the-ounce solution of nitrate of silver, or with pure phenol (followed with alcohol). Put on a sterile dressing or an antiseptic dressing. Change the dressing every two days.

At the end of four or six days, there is a dry crust (not pustulating).

Now the patient can take care of the wound, with a dressing of ichthyol (20 grains), phenol (10 grains), ointment (oxide of zinc ointment, 1 ounce), changed night and morning.

The evils of vaccination, particularly those incidental conditions following the pustulating arm, are prevented by such a procedure. There can be no impetigos, and erythema multiforme and its congeners cannot result from pus absorption. Isadore Dyer (American Journal of Tropical Diseases and Preventive Medicine, December, 1913).

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Vomiting, Treatment of. — The author reports the cure of a severe case of vomiting of pregnancy by the administration of $\frac{1}{36}$ grain (0.0018 Gm.) of apomorphine in a teaspoonful of water. He has used this measure in other cases of vomiting or nausea with like good results. In the minute quantities employed the drug quiets the inflamed gastric mucosa and produces no ill effects. M. Field (Journal of the American Medical Association, November 1, 1913).

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Whooping-cough, Treatment of.— The earliest phase of whooping-cough presents, according to the author's observations, merely the appearance of a pharyngitis, which may or may not be accompanied by coryza. A 2 per cent. solution of silver nitrate was applied by him to the throat in 95 cases for the purpose of preventing the spread of the infection downward, and in 84 instances most useful results were evident. Secretion of mucus was prevented through the caustic action of the silver and coughing spells due to irritation by the secretions therefore minimized. In addition, a beneficial effect was produced on the child by suggestion. At the end of a week the coughing paroxysms were about the same as before, but their severity was much diminished, and they gradually subsided into cough of the ordinary type. In infants the author applied the silver nitrate every day at first, later, and in older children throughout, on alternate days. Hydrogen dioxide was also employed. Ochsenius (Therapie der Gegenwart, November, 1913).

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Wounds, Treatment of.—To promote granulation in large wounds, the author directs his patients to expose the surface to a stream of air from an ordinary electric fan or register. The wound surface promptly becomes dry as a result of the evaporation caused by the current of air, and healing occurs with notable rapidity. The measure was found especially serviceable in promoting healing of obstinate leg ulcers and discharging eczema. According to the author, a stream of air at the ordinary temperature acts as well as the douches of heated air recommended by previous writers for similar purposes. A. Heisler (Münchener medizinische Wochenschrift, November 4, 1913).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

In amenorrhea, relative or absolute, ovarian extract considered best remedy by author. *Bandler.* 91

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing, exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* 55

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solution. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delirium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* 110

Diabetes Mellitus. TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.*, of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often causing glycosuria to disappear. *Cornwall.* 110

Dysentery, Bacillary. TREATMENT. In acute form: (1) Rest and warm covering; (2) only small amounts of food at a time; (3) calomel at the outset; (4) acid drinks; (5) enemata of saline or soda solution or of methylene blue. In chronic form: (1) Rest; (2) enemata of 1:500 or 1:1000 silver nitrate, 0.25 to 0.5 per cent. tannic acid, 1:500 or 1:1000 thymol, 1 to 2 per cent. resorcinol or creolin, or enemata of gum arabic mixed with bismuth subgallate or iodoform; (3) phenyl salicylate, tannigen, ichthyol, or calomel internally; (4) serum treatment, 10 c.c. in mild cases, 10 c.c. twice at six- to ten- hour interval in medium cases, and 40 to 60 c.c. in severe cases, not exceeding 20 c.c. at a time when serum used daily; (5) appendicostomy or cecostomy with irrigation in severe cases. *Bassler.* 111

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* Page 11

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

In facial erysipelas: Have beside bed bowl of boric acid solution in which ice is placed. Keeping cloths frequently moistened with the solution continuously on face effectually relieves pain and burning. Where leg or arm involved: Wet dressings of boric acid or aluminum acetate. In migratory cases: Ichthyol may be applied or surfaces painted with picric acid solution. *Erdman.* 112

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ʒiiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Report of cases improved by administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided among twenty days in each month. *Gaultier.* 90

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1). Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2) grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* 48

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of dis-

charges, a second vaccine should be made. *Wolff.* Page 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomentation applied for five or ten minutes twice, and followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* 50

Hemorrhage, Cerebral. TREATMENT. Venesection used with good results and recommended in cases of apoplexy in full-blooded patients with blood-pressure of 200 mm. or more. Amount of blood let in author's cases, 12 to 48 ounces. Where vein at elbow not easily found in stout persons, there are usually varicose veins in legs which can be opened. *MacFarlane.* 121

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valuable for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation, in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.*, daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* 53

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disappeared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* 55

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intramuscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* Page 91

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

TREATMENT. Frequency of gastric atony and dilatation, with resulting digestive symptoms and secondary toxic manifestations (aches and pains in chest and right hypochondrium, morning depression, insomnia, hepatic weight, vertigo, chilliness an hour after meals, fleeting edema, etc.), in pulmonary tuberculosis pointed out. Treatment: (1) Support to stomach and abdomen by Rose belt of plaster or moleskin, followed, upon improvement, by supporting belt to be worn continuously and later in daytime only. (2) No liquids with meals or for two to two and one-half hours after. (3) Lunch to be light. (4) Recumbency, with attempt to sleep for one-half to one hour after each meal. (5) No alcohol or fresh bread. (6) Medicinal treatment: Tr. nucis vomicæ, acidi hydrochlorici dil., āā f℥ss (15 c.c.); glyceriti pepsini, f℥iss (45 c.c.); aq. menthæ pip., q. s. ad f℥iij (90 c.c.). Teaspoonful in ½ glassful of water after meals. If much flatulence, add chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until relieved. (7) Cold shower or sponge baths, with needle bath to abdomen, followed by brisk rub, each morning. (8) Where mucous passages and flatus: Turkish towels, wrung out in hot water, to be applied to abdomen for one-half hour after meals. (9) Thorough mastication of food and abstention from worrying at meals. (10) Fats to be avoided at first. *F. N. Robinson.* 95

Measures to overcome fever described: (1) Where prolonged fever drains on patient's strength, pyramidon is drug to be preferred—5 grains (0.3 Gm.) in cachet at night, or, if necessary, three times a day. In neurotics bromides sometimes efficacious. (2) Rest in recumbency to be insisted on until temperature does not rise above 99° in men or 99.2° in women, when patient may sit in chair for two hours, then recline on couch, in open air if possible. Exercise then gradually increased. (3) Where severe cough, sedative mixture tends to prevent fever from the exertion and autoinoculation. (4) Where rest and drugs fail, cautious use of tuberculin (T. R. or B. E.), beginning with only $\frac{1}{100000}$ mg., exerts antipyretic action, though often only for short periods. Tuberculin acts best in cases free from fever while at rest, but febrile when exercise taken. *Wethered.* 120

Ulcer, Gastric. DIAGNOSIS. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* 114

Ulcers. TREATMENT. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

Urticaria. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Vomiting. TREATMENT. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1:1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received ⅓ c.c. as initial dose and ⅔ c.c. four days later; others, ½ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a bronchopneumonia as complication, a mixed vaccine should be used. *Davidson.* 118

Book Reviews

DIAGNOSIS OF THE MALIGNANT TUMORS OF THE ABDOMINAL VISCERA. By Rudolph Schmidt, Professor of Medicine in the University of Innsbruck. Authorized English Version by Joseph Burke, Sc.D., M.D., Attending Surgeon, Buffalo Hospital of the Sisters of Charity; Consulting Surgeon, Emergency Hospital, Buffalo, N. Y. Octavo of 361 Pages. New York: Rebman Company, 1913. Cloth, $4.00.

To choose the right path between two extremes of possible error in chronic intra-abdominal disease, viz., recognition of its malignant nature too late for operability and subjection of the patient to a useless operation through erroneous assumption of the existence of malignancy, is often one of the most perplexing problems confronting the practitioner. In going over the completed histories of many cases of this group, Prof. Schmidt became convinced that an early diagnosis in most instances would have been possible had it not been for the fact that the medical adviser, through no fault of his own, lacked experience. The book before us, based on many years of special study of the subject in the late Prof. Neusser's clinic, was, therefore, written with the especial intention of forearming the general practitioner in this particular field of diagnosis. In the preliminary general portion of the book are considered the essentials of physical and X-ray examination, testing for blood in the feces, examination for sarcinæ, Boas-Oppler bacilli, etc., Ehrlich's diazo and aldehyde reactions, general symptomatology, etiology of malignant tumors, important factors in the taking of case histories in these cases, prophylaxis, and local and general hygiene. In the succeeding special part, malignant tumors of the various abdominal viscera are systematically considered, the following subheadings appearing in reference to each organ: Early symptoms; physical examination; accompanying symptoms from other organs; types of disease, course, and duration; suspicious factors and differential diagnosis. The subjective phenomena so frequently the forerunners of objective findings in these cases are discussed in especial detail. Efforts at cancer diagnosis by serum reactions, as in Brieger's antitrypsin determination, Pfeiffer's anaphylaxis test, Ascoli's meiostagmin reaction, etc., are not deemed of sufficient import to be noticed—and rightly so as it happens, for Abderhalden's more recent contributions bid fair to render the earlier efforts in other directions superfluous. The second half of the book is occupied by a series of case histories referring successively to malignant growths of each of the abdominal viscera, and thus presents a summary of the author's actual clinical experience. A brief critical discussion terminates the recital of each case. On the whole, the book should prove of great assistance to its readers in the early differentiation of malignancy from other chronic intra-abdominal conditions. Dr. Burke is to be congratulated on having achieved the translation of so valuable a work.

THE ELEMENTS OF BACTERIOLOGICAL TECHNIQUE. By J. W. H. Eyre, M.D., M.S., F.R.S., Director of the Bacteriological Department of Guy's Hospital, London, etc. Second Edition. Rewritten and Enlarged. Octavo of 518 Pages, with 219 Illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $3.00, net.

In the new edition of this very practical book numerous additions have been made representing the advances and novelties in technique brought out since the former edition appeared in 1901. Many new line drawings have also been introduced, and some of the original cuts redrawn. Though purporting to be merely an elaboration of the typewritten notes distributed to the author's classes in applied bacteriology, the book is, as it stands, a decidedly comprehensive presentation of the subject. Of the methods described some are new, others not, but all have been found by the author both reliable and capable of giving satisfactory results even in the hands of beginners. The procedures are so fully described (including the fitting up and adapting of apparatus) as to leave no room for doubt in any of the details of technical manipulation, and the work is thus one calculated to be of value not only to the student in the absence of his teacher, but also to isolated workers in laboratories far removed from centers of instruction. The early sections of the book are taken up with descriptions of apparatus, sterilization methods, the microscope, staining methods, methods of demonstrating bacteria in tissues, classification of the fungi, anatomy and physiology of bacteria, nutrient media, and incubators. The remainder of the work deals in a careful, concise manner with the methods of cultivation, isolation, and identification of bacteria, inoculation methods, immunization, preparation and titration of hemolytic serum, experimental inoculation of animals, blood examinations, agglutinins and opsonins, the post-mortem examination of experimental animals, and bacteriological analyses of water, milk, ice-cream, meats, oysters, sewage, air, soil, etc. The illustrations are an instructive feature of the book, nearly every apparatus described being depicted. The work can be warmly recommended as a clear, reliable introduction to the technical procedures of bacteriology.

A Textbook of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine, Medico-Chirurgical College, Philadelphia, etc. Eleventh Edition, Thoroughly Revised. Octavo of 1335 Pages, with Illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $5.50, net; Half-morocco, $7.00, net.

The appearance of the eleventh edition of a textbook attests to a high degree of popularity and, hence, of general utility. An advantage of the present work is that it is revised and reprinted at such short intervals—the first edition appeared in 1897—as to be kept as nearly abreast of recent progress as is possible in a work of its class. Among the additions to the new edition are: McPhedran's and Burke's signs in typhoid fever, phlebotomy and transfusion in hemorrhage in the same disease, hot-air inhalations in diphtheria, Lee's sign in acute articular rheumatism, Iron's method of diagnosis of gonorrheal arthritis, Pastia's sign of scarlet fever, copper salts in dysentery, Erb's syphilitic spinal paralysis, Weil's test in syphilis, vegetable days in diabetes, sugar solution in diabetic acidosis, effect of atophan in gout, radium emanations in gout, salvarsan and sodium cacodylate in progressive pernicious anemia, benzol in leukemia, vaccine in goiter, hexamethylenamine in acute bronchitis, artificial pneumothorax in hemoptysis, diastolic expiration in aneurism, meiostagmin reaction in gastric cancer, etc. Among the new subjects discussed are diseases of the parathyroid gland, auricular fibrillation, auricular flutter, extrasystole, streptococcus tonsillitis, duodenal stenosis, Lane's ileal kink, and status thymicolymphaticus. The sections on antityphoid vaccination, diseases of the thymus, and pellagra have been rewritten, and the part of the book on nervous diseases revised by Dr. C. S. Potts. This work will undoubtedly—and deservedly—continue to rank as one of the very best single-volume texts on medicine.

Die ambulante Therapie der Lungentuberkulose und ihre häufigsten Komplikationen. Ein kurzgefasstes Lehrbuch für Aerzte und Studierende. Von Dr. Karl Blümel, Spezialarzt für Lungen und Halskrankheiten in Halle a. S. Ss. 208, mit Abbildungen im Text und Zahlreichen Temperaturkurven. Berlin und Wien: Urban und Schwarzenberg (New York: Rebman Company), 1913. Paperbound, 6 marks ($1.50).

This book, as its title suggests, is a concise presentation of the subject of tuberculosis treatment, intended particularly for the general practitioner. The author seems to believe that only temporary benefit can be secured for the tuberculous by treatment in special institutions, and this, coupled with the fact that existing institutions can accommodate only a small proportion of the tuberculous (50,000 out of 500,000 cases in Germany), leads the author to recommend that especial attention be paid to improving the home conditions and mode of life, occupation, etc., in tuberculous cases, and to lay stress on the home treatment of these patients. The successive sections of the book deal, respectively, with hygienic-dietetic therapy, specific therapy, drug treatment, surgical treatment, and the treatment of the commoner complications of tuberculosis. Ambulant treatment is contraindicated: 1. In all febrile cases. 2. In patients whose home surroundings would defeat attempts at systematic treatment. 3. In patients whose personal characteristics would lead to the same result. As described by the author, the ambulant treatment consists essentially of an application of the measures usually carried out in special institutions to the home treatment of these cases. He holds that the value of so-called "good air" as a specific against the disease has been overestimated. The customary open-air treatment, however, together with hydrotherapy and full diet, are, however, duly recommended and described. The particular ingestion of fats, and especially of carbohydrates, is advised. Tuberculin treatment should be given along with, and never as a substitute for, the hygienic-dietetic measures. The author goes so far as to state, however, that, in general, there can hardly be an ambulant treatment of tuberculosis without ambulant tuberculin treatment, and that in the interests of the patients it is to be hoped that the time will soon be at hand when all practitioners will learn to use tuberculin. In the sections of the work on drug treatment and the treatment of complications the reader will find much suggestive material, and the book as a whole can be commended as being one possessing a high degree of practical utility.

The General Field

Conducted by A. G. CRANDALL

Acute Indigestion

The mortality from acute indigestion seems to be rising about as fast as that of cancer.

Just why it is that a man perfectly sane and sensible in affairs of business or in his social relations will attempt to carry on a process of personal nutrition with practically no knowledge on the subject is one of the modern mysteries.

A person's efficiency is dependent entirely upon nutrition, and, as efficiency is the greatest factor in the success which he is so earnestly striving to accomplish, it would seem to be a most logical step for him to reason out for himself that he should make a study of the digestion problem, and thus be able to secure the maximum benefit without taking the chance of developing some eccentric combination of the stomach contents which will practically produce an explosion and incidental heart-failure.

The intelligent public does not think it advisable to concentrate its mind too much upon the state of the bodily health, which is, of course, the correct way in which to look at the subject; but that does not imply that ignorance of physiology and digestion is a state of bliss. It is rather a process of skating over thin ice with the eyes shut.

Fortunately, the laity are awakening from their somnolent attitude as to physiologic cause and effect, and are thus able to anticipate the possible or probable effects of perverted function. This leads them to the doctor's office, often more for enlightenment than for medical treatment. When the time arrives that a considerable proportion of the doctor's office work is made up of brief lectures on physiology, that state of affairs will be greatly to the advantage of both physician and patient.

* * *

Small Farms for Teachers

A prominent educator suggests that the teacher be placed on the same plane of independence as the clergyman, by providing him with a small farm, to be compared with the parsonage conferred upon the pastor of the church.

In some sections of the country, physicians reside upon farms, and undoubtedly they must experience considerable satisfaction because of the incidental independence associated with farm ownership.

The family physician has about as much occasion to prescribe milk and eggs as he has to prescribe drugs. Unfortunately he cannot always be as sure of the purity of his foods as of his drugs. What could be more ideal than that the doctor who prescribes pure foods should be in a position to

supply them to his patients? Many a family that is a little slow about paying the doctor's bill would be prompt to pay both for foods and advice if they could be both secured from the same source.

* * *

Always Progress

The evolution of the arts brings with it new developments of disease. Already the term "occupational" disease conveys much significance to the professional mind.

Most of these disorders are associated with some perversion of muscular activity or the inhalation of disease-producing particles.

It is probable that pathologic manifestations of the tango will be classified as a mental disease. It is equally possible that some of the manifestations of this disorder will be placed under the paresis group of mental afflictions. Fortunately, such acute conditions are usually self-limited. It does not seem improbable that this most recent mental and physical affliction may have run its course and reached a period of recovery within a comparatively short space of time.

* * *

A Slandered Beast

Persistent misrepresentation usually produces a reaction. For generations the ferocity of the grizzly bear has been portrayed with great skill, chiefly by brave nimrods returning from vacation trips. From the graphic tales set forth the man-hunting tiger is a timorous beast in comparison.

It now appears that, left to his own devices, the grizzly is amiable and inoffensive, subsisting upon mice and other undesirable citizens of the animal kingdom, with a sufficient admixture of vegetable foods to make the "balanced ration" of which we hear so much, and that only when he is treated with that rudeness which we all naturally resent does he exhibit any ill temper.

It is proposed that the benevolent and paternal government provide a reservation for the grizzly in order that by some system of Burbankism he may be allowed to evolve himself into a friend of mankind. If this is done and he be permitted to pursue the even tenor of his way undisturbed by vacationists, he may develop a sunniness of temperament that will make no farm home complete without a grizzly.

* * *

Cannot Stand Luxury

Spartan simplicity seems to be essential to the health and well-being of the pig. If allowed to hunt (or at least squeal) for his meals the porker is a lusty animal with a good digestion and well-developed immunity to disease. But if reared in luxury among numerous blasé companions, the pig becomes obese and inactive, and his immunity becomes so reduced as to make him an easy victim to various disorders known but too well among hog breeders.

The present outlook for roast pig is indeed gloomy. Prices have risen to an almost prohibitive figure, and progressive farmers are pessimistic, notwithstanding the big inducements held out by dealers.

This train of evils is but another example of an age of luxury and snobbishness. It is no longer considered

good form to keep the pig in the parlor, or, in fact, to regard him as a companion in any sense. Banished from the sympathy and companionship of his owner, surfeited with fattening foods instead of subsisting upon scraps from the family table, the pig, once the pet and pride of the household, has lost his incentive. But a small knowledge of history is required to show that the logical result of such conditions is degeneration.

* * *

No Sex Instruction for Montclair

The city of Montclair, N. J., is up in arms in opposition to some proposed State legislation which will make sex instruction obligatory in the public schools of New Jersey. In the judgment of many onlookers their protests are justified.

Any legislature which proposes to overrule the wishes of a considerable number of parents in a matter as vital to the family as sex instruction betrays not only a lack of good sense, but that rawness which has brought contempt upon other State legislatures.

Of course, the rightful place for education of so personal a nature is the home. Children who are inmates of institutions and debarred from parental supervision may reasonably be instructed by properly constituted authorities; but to override the wishes of parents in the average home in this matter is as much an act of agression as it would be for a legislature to decree that, because bottle-fed infants are more susceptible to disease, each mother of an infant should be required to feed her child from the breast, irrespective of conditions.

* * *

Keeping the Nerve

The young son of a French-Canadian was desperately ill. The sympathetic neighbors, who liked the little fellow, were profoundly concerned. They considered the outlook serious. One of them, expressing his feelings to the father, was somewhat disconcerted by the laconic reply: "Oh, I guess he will pull through. It's hard to kill a Frenchman!"

The lad made a good recovery and received every educational assistance which his father's financial circumstances would justify. There was no lack of paternal affection. In the great physical crisis the father had simply kept his nerve.

The physician who can have the cool-headed co-operation of the family has a much better opportunity to carry a serious case through to recovery, and a cool head in such a crisis does not necessarily imply a hard heart.

That an optimistic family atmosphere is a great moral support to a very ill patient is too obvious to justify the assertion. And that many patients are depressed by evident family discouragement is equally obvious.

* * *

The Uplifters

Suppose you were a hard-working but healthy woman and while your husband was about his daily toil you decided to do the family washing and had your two or three also healthy small children in the same room, so

you could keep them warm and keep an eye on them.

Then suppose just when the room was in its maximum of disorder, suddenly, without any ceremony whatever, a man pushed his way into the room and against your most vigorous protests proceeded to take a picture of the room, just as it was, to be used on the screen as a part of a tuberculosis exhibit! You could then be fairly sure that you were being "uplifted."

It is a nice thing to know the order of exercises at a swell dinner or to be able to realize that at a high-priced restaurant pomme de terre does not mean sauer kraut; but it is a considerably greater accomplishment to possess the good breeding that permits a person of position to come into contact with the poor without patronizing them or doing violence to the basic principles of politeness.

* * *

Fish as a Cause of Cancer

We are now told that a diet of fish is productive of cancer.

We have known for a long time that the use of red meats was productive of Bright's disease, rheumatism, and various other ailments among those persons who are financially able to eat red meats in abundance. We are also aware that those deprived of meats and of a diet rich in protein develop tuberculosis in large numbers.

There seems to be no form of diet which can be depended upon to produce perennial existence.

It is remarkable how obtuse many persons seem to be as regards that systematic exercise in the open air so characteristic of the majority of those who reach a green old age.

* * *

The Bogey Man of New York

A young man reared in the smoky atmosphere of Pittsburgh, and naturally ignorant of what was transpiring at a distance of more than fifty feet, was suddenly transferred to the illuminated vistas of the Great White Way of New York. What he saw there was more than a revelation. It shocked his Pittsburgh conscience; whereupon, filled with righteous indignation, he removed one of New York's most conspicuous citizens.

The excuse advanced for this act of vandalism was not considered sufficient, and certain guardians of the peace of Manhattan Island devoted many months to the purpose of placing this myopic champion of the poor and unsophisticated in Matteawan.

Finding his life at this resort somewhat tedious, the Pittsburgh champion hereinbefore mentioned (to use the appropriate legal verbiage) resolved to get out, as he did.

And now, after a lapse of several months, cold chills are still chasing each other in rapid succession up and down the spines of a large corps of alienists and at least one distinguished member of the legal profession, who insist that justice demands the return of the champion aforesaid to the seclusion of Matteawan, because — possibly afflicted with another brain storm—he may be led to try corporeal experiments on one or more of the distinguished alienists and various other eminent citizens.

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Department on the Internal Secretions

Original Articles and Summaries of Selected Articles

THE INTERNAL SECRETIONS AND THEIR LIMITATIONS.*

BY C. E. DE M. SAJOUS, M.D., LL.D.,

PHILADELPHIA.

THERE are features of our methods of investigation which, analyzed even by laymen, would evoke not only surprise, but merited criticism. A laboratory worker will perform an experiment or a series of them and, on the few more or less solid facts gleaned therefrom, will erect a theory. This theory may be faulty and fit with none of the data garnered from other directions; the experimenter himself may be untrained technically and scientifically; but it matters not; the man has performed experiments; hence his conclusions are entitled to consideration and are heralded far and wide. A vast aggregate of data furnished by a host of men working on such a plan cannot but lead to confusion and delay in reaching sound knowledge on any question. This applies particularly to the work being done on the ductless glands. Let us compare this plan with that of an investigator who, less pretentious as to his own technical abilities (on every branch of experimental knowledge, if you please), bases his conclusions on a broad survey of the scientific field of normal and morbid biology, *i.e.*, embryology, zoölogy, cytology, physiology, anatomy, histology, chemistry, clinical medicine, pathology, pharmacology, etc., and who selects only those experiments, clinical observations, etc., hundreds perhaps, by men of special competence in those branches, to arrive at a conclusion. Will this man, whose work is co-ordinated and systematic, who insists on perfect accord of *all* his conclusions,

* Read before the University of Pennsylvania Chapter of the Alpha Mu Pi Omega Medical Fraternity, Philadelphia, March 14, 1914. Published simultaneously in American Medicine.

those on one ductless gland fitting perfectly with those on all other glands, not be more likely to approximate the truth? While the first man will base his conclusion on, say, ten personal experiments, the second man will base his on, say, five hundred experiments performed by experts. Does this in itself not suggest greater precision on any question—as far as available knowledge will permit?

The latter plan is the one I adopted many years ago when my work on the Internal Secretions was projected. No one today, endowed with the least degree of fairness, can deny that steadily, as the experimental work on the ductless glands has progressed, my views have in many respects been confirmed. This must serve as my apology for the introduction, in the following remarks, of my own deductions.

The literature on the internal secretions nowadays is so confusing, owing to the total lack of co-ordination in the work carried on, that it is difficult to obtain any clear idea of the functions of any ductless gland. It has seemed to me, therefore, that a summary of these functions might prove interesting to you. You may be laboring, however, under the impression that, giving special attention to these organs, I am a rabid advocate of the idea, introduced by Brown-Séquard, that all organs produce an internal secretion. I would ask to be considered in precisely the opposite light, *i.e.,* as most conservative. Very few glands, from my viewpoint, produce an internal secretion in the sense that their product has a *specific* influence on the functions of all other organs as true hormones, *i.e.,* on the body at large. To endow with an internal secretion so many structures as is at present done undoubtedly serves greatly to obscure the whole problem and to hamper progress. It is because of this that the title of this paper refers to the limitations of the subject. Indeed, I will begin with the series of organs which do not appear to me, judging from the evidence available, to produce internal secretions.

Organs Having No Internal Secretion.

Pituitary Body.—This structure not many years ago was classed among the vestigial organs, but its functional importance asserted itself when Marie showed its intimate causal relation to the disease he termed acromegaly. Evidently it had some powerful influence over general nutrition. Gigantism was also associated with it, lesions of the pituitary being discernible in practically every instance. How does it exercise its influence?

The prevailing view at the present time is that it produces an internal secretion. It is composed of two parts: (1) a glandular or spongy portion composing the anterior lobe, and (2) a nervous portion, the posterior lobe, which includes a layer, the pars intermedia, that separates it from, but is in juxtaposition with, the anterior lobe. It is this pars intermedia which is said to produce the secretion that extracts of the posterior lobe, or the active material obtained from it, are supposed to represent. Now the weakness of the hypothesis is shown by the fact that the only glandular portion of the organ, the anterior lobe, the structure of which would suggest a secreting

gland, produces extracts which are inert, as shown by Howell, while the structure which produces active extracts is a nervous organ presenting no secretory characteristics and connected directly with the brain. The colloid masses supposed by Herring, Cushing, and others to be secretory products are present in the inert anterior lobe, but not in the active posterior lobe, according to Grünbaum. Indeed, there is ground for the belief, to which Halsted has recently added testimony, that the colloid found in large quantities in relatively inactive thyroids is an inert substance and not a secretion at all, its presence in the inert anterior lobe being additional proof of this fact. On the whole, we can certainly state with Swale Vincent that "it is extremely difficult to imagine how such a structure can be regarded as a secreting gland."

I have long held that the pituitary body is not a secreting gland. It serves, from my viewpoint, to co-ordinate two important though correlated functions: The first of these is to protect the body against disease and poisoning. The first part of the mechanism is the anterior lobe, a contractile organ through which the circulating blood passes, and in which the contents of the blood-cells, white and red, are in part evacuated. The cellular fluids and the plasma form a substance, the colloid, which passes through a vacuole between the anterior lobe and the pars intermedia of the posterior lobe and out through the lymphatics, their elimination being assisted by periodical contractions of the organ similar to those of the spleen, in which blood-cells are also broken up. On its way out, however, the colloid residuum comes into contact with the pars intermedia, which contains nerve cells resembling certain cells found in the olfactory area of the nasal cavities. I regard this portion of the pars intermedia as an important sensory organ having for its purpose to *test* the blood for any poison it may contain, just as the nasal olfactory area can test and detect unpleasant and often harmful emanations in the air. The sensory organ in the pars intermedia I regard as the homologue of the osphradium or test-organ found in lower forms, which has for its purpose to protect them by testing their respiratory fluid, sea water, represented in us by our blood. In the higher forms, including man, the protective impulses are transmitted from the sensory or test organ in the pars intermedia by way of the adjoining nerve cells in the posterior or neural lobe, up the infundibulum, along the base of the brain, the medulla oblongata, and cord, and thence through the sympathetic to the thyroid apparatus, adrenals, and kidneys. When a poison or toxin capable of exciting the test-organ (for some poisons depress it) occurs in the blood, therefore, the thyroid and adrenals increase their output so as to increase the antitoxic power of the blood at large, while the kidneys are stimulated to excrete with abnormal vigor the poison itself or the end-products into which it has been converted.

Have we any evidence of such a function in man? I might quote in this connection the observations of a believer in the secretion theory—an antagonist therefore—in reference to the after-effects of surgical removal of the pituitary body for tumor of this organ. "I wish to call attention,"

writes this observer, J. A. Flexner, of Louisville, "to the extreme susceptibility of these patients to morphine and to autointoxication, especially of purin origin." In referring to a personal fatal case, he states that "one twenty-fourth of a grain of heroin kept her narcotized for over a day," and he concludes that the "sudden and unexpected end was due to stopping of her glandular feedings and to the severe autointoxication which resulted from her careless dietary." Considered from my viewpoint, the woman, by losing her pituitary, had lost her power to oppose actively certain poisons, even those derived from foods.

Yet, the death is partly attributed to the absence of glandular feedings, meaning thereby the internal use of pituitary gland. There is no doubt of this, but, as noted by many physiologists,—Howell, Schäfer, and others,—extracts of the posterior pituitary and the gland itself cause effects, both general and toxic, which are identical with those of adrenal extracts. That in the posterior lobe the adrenal principle is present, though in close organic combination with other substances, is shown by the fact that when one applies the chromaffin test a marked positive reaction is obtained (Wiesel). This shows that the organ forms part of the chromaffin system, *i.e.*, of that system composed of adrenal tissue and sympathetic ganglia and nerves. The giving of pituitary gland to the patient helped her, therefore, because she received through it a part of the aid she would have obtained had her pituitary and its test organ been present to stimulate her adrenals.

This introduces the second function I attribute to the pituitary body, that is, to its neural lobe. Its connection with the chromaffin system stamps it as a sympathetic ganglion. I have long held that it is the chief ganglion of the sympathetic and chromaffin system, and that its nervous elements are highly differentiated cells, the axons of which follow the path outlined above, to become connected with the sympathetic system at large. But it will take many years, doubtless, even if my views prove to be sound, to develop fully the functions of the pituitary as I interpret them. It brings in features which themselves have not as yet been sufficiently fathomed to permit fundamental conclusions necessary to the mechanism as a whole. Yet, when we realize that not many decades have elapsed since sympathetic fibers were regarded as connective-tissue fibers, there is some hope that even the test organ will have its day.

Pineal.—This organ has had a varied career. Descartes thought it contained the soul; its connection with the pineal eye of reptilia and other low vertebrates caused it to be classed with the vestigial organs,—a convenient waste basket for structures the functions of which are unknown. Like the pituitary body, also classed formerly as a "vestigial organ," it has been raised to the rank of a useful organ. It contains neuroglia and what are regarded as secretory cells. Certain of its follicles contain what is termed "brain sand," also found in the choroid plexus and elsewhere, but devoid, as far as is known, of physiologic importance. As to the functions of the pineal, it is thought in some way, perhaps through a secretion, to control growth in the young. Destructive tumors of the pineal in children under the

seventh year may cause them to become abnormally tall and prematurely developed as to their genital organs, hair growth, and ossification. Obesity is occasionally observed in these cases. Yet the pineal does not seem to influence metabolism, judging from the results of removal. Notwithstanding this, the feeding of pineal gland to young animals by Dana, Berkeley, Goddard, and Cornell caused them to outgrow the controls rapidly in activity, size, intelligence, and resistance to intercurrent disease, while in children it appeared to benefit certain cases of retarded development, though not cases of total idiocy and gross physical defect.

From my viewpoint, although future labors may modify this attitude, the pineal does not possess the attributes of a secreting organ, the effects obtained with its extracts being accounted for through the fact that the large granular nuclei it contains in abundance are very rich in nucleins. It appears to me as being more of the nature of a nervous organ capable of influencing directly or indirectly the peripheral circulation and particularly that of certain organs, the genitalia and skin especially, during development.

Thymus.—There is no ground, in my opinion, for the belief that this organ is the source of an internal secretion. Its structure resembles greatly that of lymph-glands, the tonsils, etc., and is rich in leucocytes and large concentric corpuscles, known as Hassall bodies, the special functions of which have not been established. Other structures resembling the latter and known as myoid cells, owing to the resemblance of their elements to rudimentary muscle fibers, are also to be found. Although the organ is necessary to development, disappearing in most instances only at about the sixteenth year, its removal in the young does not necessarily prove fatal. While in certain animals, the guinea-pig, for example, the operation does not influence development, in others, puppies or young dogs, for instance, it causes anemia and leucopenia, with deficient nutrition, very marked cardiac dilatation, and death within a year. The series of events, as observed by Klose and Vogt, includes a period of obesity which lasts two or three months and one of idiocy lasting until death. The bones are then found to be atrophic, dwarf-like, and deficient in undissolved calcium. The fact that removal of the thymus in hens causes them to lay eggs without shells emphasizes the influence of the thymus upon calcium metabolism.

The stage of idiocy observed in dogs after removal of the organ recalls the autopsies of 89 children recorded by Katz and Bourneville. Of these, 25 had been mentally weak or epileptic; without exception these cases showed absence of the thymus, while the organ was normal in all other children.

These data, coupled with the facts that the thymus contains a nucleoproteid which is very rich in phosphorus (3.5 per cent.), and that these nucleoproteids and nucleins are the most prominent constituents of the protoplasm of all cells, and, as stated by Oliver and Schäfer, "the most probable antecedents of the internal secretions," led me to conclude in 1903 that "the thymus is the main organ upon which the osseous, cerebrospinal, and nervous systems depend for their phosphorus during their development." It is a temporary storehouse, in other words, from which the tissue-building leuco-

cytes gather the elements out of which the nuclei of tissue cells are formed. Nothing has been published since that has weakened my opinion that the thymus does not produce a true internal secretion.

Liver.—The prevailing view is—justly, in my opinion—that the glycogenic function of the liver does not belong to the category of an internal secretion. Urea has been termed by Biedl a "negative internal secretion," owing to its relative harmlessness, and because it is believed to excite the kidneys. When, however, we trace urea to its origin and realize that it is an end-product of toxic substance, protein wastes, ammonia compounds, etc., subjected to the antitoxic action of the liver, we can hardly consider it otherwise than as an excretory product.

Organs Having Autonomous Internal Secretions.

The second series of organs to which I shall refer are those which, from my viewpoint, do not produce an internal secretion possessed of a specific action throughout the body, but are intended only to influence those structures which form part of the mechanism to which the secreting organ belongs—the ovary, for instance, in its relations to the genital apparatus. This class might be termed *autonomous* internal secretions, to identify them from those which affect the body at large, the true hormones, as defined by Starling, who wrote recently: "By the term 'hormone' I understand any substance normally produced in the cells of some part of the body, and carried by the blood-stream to distant parts, which it affects for the good of the organism as a whole. The hormones are thus the chemical means of correlation of the activities of different parts of the body."

Testes.—Although the testes are thought to produce an internal secretion, orchitic extracts are known to owe their beneficial effects to nucleoalbumins, substances that are rich in phosphorus. The fact that beneficial effects have also been noted in obesity, eczema, psoriasis, and other disorders in which either thyroid or adrenal gland is of distinct value suggests that both of these substances are present in testicular preparations, besides the phosphorus-laden nuclear products to which their main therapeutic value is ascribed.

The presence of the adrenal principle reveals itself when the identity of the one testicular product which has given the best therapeutic results is inquired into. This product, known as spermin,—isolated by Poehl,—has given better results than the ordinary orchitic preparations, and in the same disorders. It is probably produced by adrenal rests in the testes similar to those in the kidney. When considered in the light of the functions I attribute to the adrenal secretion, spermin resembles it very closely. It is an oxidizing body which acts catalytically; it gives the guaiac and Florence's hemin test, thus showing that it is a constituent of hemoglobin; it is unaltered by boiling, and presents other characteristics of the adrenal principle. That it is a ubiquitous constituent of the organism at large is further shown by the fact that it is found in the blood of females as well as in that of males.

Brown-Séquard, in fact, found testicular extracts as efficient therapeutically in women as in men.

My own belief is that the testes do not produce a true internal secretion, but that they restore to the blood substances which they borrow therefrom to build up, with the product of their adrenal rests, their autonomous secretion. All these substances contribute also to the formation, in appropriate structures, of semen—both fluid and spermatozoa, the latter, as is well known, being rich in nucleins. The substances returned to the body at large include, therefore, besides what portion of the autonomous internal secretion the organs of the genital system have not utilized, the unused reserve of materials created for the process of copulation which Nature, never wasteful, turns to good account, particularly during growth, *i.e.*, during the presexual period of life. This view, which is here advanced for the first time, seems to me to elucidate many obscure questions. The debility, languor, mental torpor, and deficient growth noted in boys who indulge in excessive venery or masturbation is accounted for, while it explains the effects of castration. As is well known, this operation, when performed before the age of puberty, prevents the growth of hair, arrests the development of the thorax, pelvis, and larynx, the voice remaining childish—all phenomena which are precisely the converse of those caused by an excess of adrenal secretion, as we shall see—and the prostate and vesiculæ seminales failing to develop. Briefly, and even though the long bones grow inordinately though imperfectly, owing to disturbances in calcium metabolism, these subjects remain infantile, because of their total deprivation of the testicular product, which during development should have been entirely utilized by the organism at large.

Ovaries and Corpora Lutea.—There is considerable analogy between the characteristic effects of castration in the male and those following removal of the ovaries in young females. What remains of the genital organs, the uterus, vagina, and vulva, and also the breasts, retain their infantile type. In developed females there is a tendency to atrophy of the same structures and to obesity (also observed in men after castration), menstruation meanwhile ceasing. The influence of the ovaries on metabolism also corresponds with that of the testicles. The dictum of Brown-Séquard,—to whose remarkable physical improvement under the influence of testicular extract I can bear witness,—that this agent is more efficient than ovarian extract in the treatment of women, suggests a kinship between these two organic substances. This is emphasized when the pharmacologic action of ovarian extract is considered. Precisely as does spermin, it awakens all the characteristic effects of epinephrin: it raises the blood-pressure, slows the heart, and raises arterial tension, while in castrated animals it enhances oxidation. That it influences general metabolism is shown by the fact that ovarian extract increases the excretion of urea and phosphoric acid. As stated by Mulon (1904), in fact, the corpus luteum presents all the morphologic characteristics of an aggregate of chromaffin cells, to which class the cells of the adrenal medulla also belong.

Here again, it seems to me, we are not dealing with a true internal secretion, as regards a fixed function in the organism at large. As far as available evidence permits us to judge, the ovary produces a secretion which sustains metabolism and nutrition of the *sexual apparatus,* of which the ovaries, the secreting organs, themselves form part, and also of the menstrual function. During the intervals—only from my viewpoint, please remember—the unused excess is absorbed into the general circulation, not as a special secretion or hormone, but as a part of the general asset in adrenal and thyroid secretions, nucleins, etc., with which the functions of the general organism are usually carried on. When the ovaries are removed or when menopause occurs, the organism is deprived of two of the structures which contribute to the general welfare certain substances, among which the epinephrin-like principle, and possibly nucleins, may perhaps with some degree of certainty be mentioned. I need but recall the effects of oöphorectomy and the menopause to emphasize the phenomena that attend the loss of the ovarian function.

After ovulation, which occurs during menstruation, the corpus luteum is formed. This organ is also credited with an internal secretion; but the latter acts also within the reproductive system, its purpose being, according to prevailing views, to augment markedly the nutrition of the uterus and assist in the fixation of the embryo. It seems also to insure the development of the mammary glands after conception has occurred, and to continue to do so during the earlier months of pregnancy. But as the mammary glands form part of the reproductive system, this action does not warrant the inclusion of the ovary among the true ductless glands.

Kidneys.—The belief that the kidneys are the source of an internal secretion does not rest on solid data. The renal veins do not seem to contain any sort of active agent. The renal extracts produce a rise of blood-pressure so suggestive of that of the adrenal secretion that various authors have called attention to it. Bingel and Strauss note besides that "the action of rennin, like that of epinephrin, is exerted in the muscles of the peripheral vessels." Like epinephrin, it produces dilatation of the pupil. These effects are readily explained, however, by the fact that the renal tissues contain adrenal rests, those islets of adrenal tissue from which renal hypernephroma is well known to develop. On the whole, it is possible that these adrenal rests are themselves the source of an adrenal secretion—in organic combination perhaps—and that this secretion may serve to sustain metabolism in the gland itself; but the existence of a true renal internal secretion, of value to the organism at large, is extremely doubtful.

Organs Which Produce an Internal Secretion.

We have now reviewed those organs which, to me at least, appear to produce no internal secretion, and those which produce an autonomous internal secretion specific only to the organs concerned with a single function. I shall now refer to those structures which undoubtedly produce an internal

secretion or hormone capable of influencing the entire organism. These are at present so familiar to every one, however, that but little time need be devoted to them.

Thyroid.—But fifteen years ago, about all that could be said confidently of the thyroid gland was that it yielded a secretion which subserved a useful purpose in the body and that the effects observed after removal of the organ were probably due to loss of this function. It had been suggested that the gland also destroyed waste products, but the evidence was deemed insufficient (Schäfer, 1898). Today, through the labors of many investigators, we have learned not only that the thyroid and parathyroids deeply influence general metabolism and the process of growth, but that they take an active part in defending the body against infections and other toxemias. As Vincent expresses it, "the extreme liability of thyroidectomized animals to various infective conditions is strong evidence in support of the view." This connection of the thyroid with the general process of immunity, in contradistinction from a specific action on wastes, I had pointed out in 1903, before, I believe, any other writer, both metabolism and the protective function being carried on in conjunction with the secretion of the adrenals. Later, in 1907, I submitted evidence which had led me to conclude that the thyroid and parathyroid secretions constituted the substance which Wright had termed opsonin, pointing out, however, that this substance sensitized not only bacteria, toxins, etc., but also tissue elements, wastes, fats, etc., to facilitate catabolism—a function in which also ferments, as more recently held by Abderhalden, took part. All the more salient features of my conclusions were subsequently sustained experimentally by others. A functional connection between the thyroid and the adrenals was found actually to exist by Kraus and Friedenthal, Kostlivy, and Hoskins; a direct connection between the thyroid and the production of opsonins has been established by Fassin, Marbé, and others.

Summarizing the functions of the thyroid and parathyroids, it may now safely be said that their secretions are essential to the metabolism and development of the body, while taking part in the processes which protect it against infections and intoxications.

Adrenals.—As is well known, the adrenal secretion, represented by its active principle, epinephrin, raises the blood-pressure and increases the power of the cardiac contractions, while slowing the heart, as shown by Oliver and Schäfer in 1894. A couple of years earlier Abelous and Langlois had urged that the secretion of the adrenals destroyed certain products of muscular metabolism. It has been established also that the adrenal secretion sustains the tone of the sympathetic system, and through it the cardiac and vascular muscles and circulation. Through this action it governs the vascular supply of all vegetative organs, *i.e.,* those concerned with growth and nutrition. Moreover, as more recently shown, it governs the sugar content of the blood, thus influencing carbohydrate metabolism, so important to muscular activity. These functions may be said to have received general acceptance.

As to the views which are still *sub judice,* I may recall that, beginning

with 1903, I submitted that the adrenals carried on functions of greater importance than those just mentioned. By pointing out that the adrenal secretion was the key to tissue respiration, the previously unidentified "oxidation ferment" of Schmiedeberg, Jaquet, and others, the manner in which it caused vascular contraction and thereby regulated the blood supplied to the various organs was explained, each organ being studied in turn. The glycogenic function of the liver was also gone over, and the relations between the adrenal secretion, glycogen, and muscular tissue I held at the time differ little from the views since advanced. In addition to these functions, I urged that the adrenals co-operate with the thyroid secretion and other substances to destroy not merely, as believed by Abelous and Langlois, toxic products of muscular metabolism, but also toxins and poisons of all kinds that are capable of acting as antigen, the adrenal secretion itself being an antibody. These views still await development and final experimental proof, but there is no doubt in my mind that the adrenal secretion will be proven to take an active part in oxidation and general metabolism. For the time being, however, we can only assert that it sustains the tone of the cardiovascular system, and perhaps of the skeletal muscles, and that it influences carbohydrate metabolism.

Stomach.—The secretion of gastric juice of psychic origin, that is, produced by the sight of luscious food in man, of meat by a hungry dog, etc., is totally prevented by division of both vagi. The influence of these nerves is further shown by the fact that, when the peripheral cut end of one of these vagi is stimulated, gastric juice is secreted. While the importance of the nervous mechanism of the stomach in the process may be emphasized, this is evidently not the only resource, for it has been shown that after the stomach has been wholly disconnected from the nervous system in an animal its functions are not materially impaired. This is due to the fact that the mucous membrane of the stomach contains an internal secretion, which in turn excites the gastric mucous membrane to secrete. The internal secretion referred to is not, however, obtainable from the fundus; it is specific to the pylorus.

Most authors state that this secretion is not a ferment, because it is not destroyed by boiling, but from my viewpoint this conclusion is not warranted. There is an oxidizing ferment in the gastric juice,—and derived from the blood,—which I have termed adrenoxidase, that is not destroyed by boiling a certain length of time. Be this as it may, the fact remains that we are justified in stating that the pylorus produces an internal secretion or gastric hormone which, carried through the blood to the gastric glands, excites them and causes them to secrete gastric juice.

Intestine.—Claude Bernard showed long ago that the passage of food into the duodenum provoked a flow of pancreatic juice into the intestine, but this was first ascribed to a nervous reflex. Popielski, Wertheimer, and LePage discovered, however, that this occurred when all nerves were cut upon introducing acid into the small intestine almost anywhere excepting within a couple of feet of its termination. Bayliss and Starling then as-

certained that the acid did not directly influence the pancreas through the intestinal mucous membrane, but that it caused the latter to secrete a substance which, on being carried through the blood to the pancreas, excited the latter to secretory activity. The substance secreted by the intestinal mucosa proved to be an internal secretion, which they termed "secretin." Since then, secretin has been obtained from parts of the intestine other than the duodenum, and from the stomach.

Although the organs of the digestive system, in so far as the gastric and intestinal hormones are concerned, might be included among the autonomous internal secretions owing to their apparent functional restriction to the stomach and intestines, there is some ground for the belief that even they will eventually be shown to participate in the general functions of the body, as I urged in 1907. This is emphasized by the recent labors of Abderhalden.

Pancreas.—Removal of the pancreas in animals gives rise to diabetes. We should expect that ligation of the duct of Wirsung would produce the same effect, since it is through this duct that the pancreatic secretion reaches the intestine. Yet ligation of the duct is not followed by the disease. It is evident, therefore, that it is through some other factor which is suppressed by removal of the organ that it is caused. What is this factor? The bulk of evidence indicates that, as first pointed out by Lépine in 1889, an internal secretion is produced by the pancreas in addition to that which finds its way into the intestine through Wirsung's duct, and that it is the absence of this internal secretion which in the operated animals causes diabetes.

The source of the pancreatic internal secretion is still a moot point, but the preponderating view is that the islets of Langerhans—structures which vary in number according to the degree of nutrition to which the body is subjected, inanition, *e.g.*, causing them to increase greatly in number—produce it, and, moreover, that they sustain carbohydrate metabolism. Hence inhibition of the functions of these islets through sclerosis, hyaline degeneration, etc., whether the rest of the pancreas be involved or not, as shown by a large number of autopsies, gives rise to diabetes precisely as is the case when the organ is removed.

How does the pancreas sustain carbohydrate metabolism? Does it influence the formation of glycogen or its conversion into glucose; or, again, does it influence the metabolism of sugar in the tissues? If we restrict ourselves to inhibition of the pancreatic function as a cause of diabetes, a hopeless confusion soon occurs. Indeed, there exists a diabetes due to the opposite condition, *i.e.*, excessive activity of the islets of Langerhans, for we know that epinephrin, thyroid gland, pituitary gland, and splenic extract, administered in suitable quantities, and likewise pregnancy, in which the ductless glands are overactive, all cause glycosuria. It is reasonable to suppose, therefore, that various ductless glands influence the islets through their hormones or secretions, and that it is *because* they sustain carbohydrate metabolism that, in excess, they produce glycosuria. This led me to suggest, long ago, that we should divide our cases of diabetes into two classes: the *asthenic* cases, constituting the majority, those in which the pancreas was functionally

deficient, either through local lesions or through paucity of the agencies, hormones, etc., which activate the pancreatic cells; and the *sthenic* cases, those in which, either through an excessive production of these hormones, as in infectious diseases, excessive irritability, emotional stresses, local inflammation, etc., the pancreas was overactive. Be this as it may, the fact remains that the participation of various ductless glands in carbohydrate metabolism is now generally recognized. When, therefore, we speak of the pancreas as sustaining carbohydrate metabolism, we must in all likelihood consider the organ as one only of the structures participating in the process.

It may prove of advantage to call the attention of those of you who may wish to do laboratory work in this connection to what, from my viewpoint, is an experimental error which is retarding progress by suggesting false theories. Certain experimenters have reported that epinephrin could inhibit the functions of the pancreas, but an error lies in the fact that they used doses above the proportion of epinephrin ever present in the blood, and, therefore, produced sufficient contraction of the arterioles to the pancreas to reduce greatly the arterial blood supplied to this organ. As function in any organ is dependent upon the proportion of arterial blood it receives, they erroneously concluded that the epinephrin could inhibit the production of pancreatic secretion.

The manner in which the pancreatic internal secretion is influenced by other ductless glands in the production of glycosuria—diabetes being ascribed to pancreatic lesions—has remained obscure. In 1903-1907 I offered an explanation which is gaining ground in so far as the experimental work on the subject is concerned. This explanation was that both the adrenals and thyroid, when overactive, can produce glycosuria by increasing, through their secretions, oxidation and metabolism in the pancreas, which they reach through the blood. The pancreas being thus caused to produce an excess of amylopsin, which in turn acts on the hepatic glycogen, sugar is formed beyond the needs of the tissues at large and the surplus of sugar is eliminated with the urine. This is the *sthenic* form previously referred to. In the *asthenic* form the adrenals and thyroid are insufficient, and, metabolism in the pancreas being correspondingly impaired, alimentary glycosuria occurs precisely as it does after removal of, or degenerative lesions in, the pancreas. The glycosuria of infectious diseases, from this viewpoint, would be due to excessive oxidation—incident upon the febrile process—in the pancreas, in addition perhaps to that of the tissue glucose in the body at large.

Leucocytes.—Another function of the pancreas, suggested by myself in 1903-1907 (see pp. 668 to 745, Vol. I, in the first four editions, and pp. 885 to 907, Vol. II, in the first six editions of "Internal Secretions and the Principles of Medicine"), was that the pancreatic ferments, through the intermediary of certain leucocytes, take part in the nutritional functions of tissue cells. The more recent labors of Abderhalden indicate that he has reached a similar conclusion in so far as the participation of leucocytic ferments in cellular metabolism is concerned. His labors have received prominence recently, especially through his pregnancy

test. Abderhalden holds that each cell, including the leucocytes, absorbs nutritive substances, submits them to digestion by means of enzymes it contains, and uses the end-products as material to replace its own materials as fast as they are being used up. Even though the cells of the different organs differ in structure according to their functions, they are all supplied with their nutritive pabula in the same way. As Abderhalden has done since, I also attributed to ferments, both in the tissues and in the blood, the autoprotective phenomena that take place therein, and that are brought into activity when certain poisons, toxins, etc., occur in the blood.

The Internal Secretions in Therapeutics.

The subdivision of the organs reviewed into inactive, autonomously active, and active glands may serve to elucidate the therapeutic action of either division of these organs. The specificity of the cells constituting an organ (as differentiated from that of the cells of any other organ) suggests that when this organ is employed therapeutically we should obtain its specific *general* effects only when using *true* ductless glands, *e.g.,* the thyroid or adrenals. In the case of the autonomous glands, the specific effects would affect only the organs of the system, *e.g.,* that of reproduction, under the influence of the autonomous gland of that system. The action of these autonomous secretions on the body at large, though due to by-effects, would be of major importance, however, in that they would be necessary to the physiologic dynamism of all cells by contributing substances normally utilized in the physiologic upkeep of all tissues. As regards the glands deprived of a true internal secretion, their action would be that of their chemical constituents, those of the posterior pituitary, for example. The nucleins of the thymus, however, would contribute to the actual physiologic needs of the body up to puberty, disappearance of the organ coinciding with completed development. All this coincides with the teachings of clinical experience, and seems to raise the whole subject out of the field of empiricism.

There is a vast opportunity for fruitful development in this direction—a bewildering one indeed in its possibilities. And this may be said of the entire subject of the ductless glands. When we know all their relations with metabolism and with the autodefensive resources of the body, a great stride will have been made in our strife against disease.

PRESENT STATUS OF THE SURGERY OF SYSTEMIC GOITER.*

By WILLIAM SEAMAN BAINBRIDGE, A.M., Sc.D., M.D.,
NEW YORK, N. Y.

Intracapsular Enucleation.—Enucleation of the goiter nodules from the more or less preserved thyroid tissue, according to Socin, is feasible in all encapsulated goiters. Unfortunately, the operation in many cases is impossible without severe hemorrhage. Results with regard to recurrence are as favorable after this procedure as after extirpation of the diseased half of the organ. Paralysis of the inferior laryngeal nerve may be avoided by proper care, and an existing paresis of this nerve has been known to subside after intraglandular enucleation.

Evacuation or exenteration of the goiter nodules, a procedure consisting in their incision and the removal of the contents, is very rarely indicated.

Resection of the goiter is performed especially in the presence of multiple nodules, or in parenchymatous goiter, when enucleation is not called for.

Partial Thyroidectomy or Strumectomy.—In the majority of cases partial thyroidectomy is limited to the lobe of the gland which is seriously enlarged, usually the right. Almost two-thirds of the goiter may be removed in this manner, without curtailing the thyroid parenchyma. Partial thyroidectomy is often simplified in systemic goiter, as compared with ordinary goiter, by the small volume of the tumor, which is rarely deep seated. However, adhesions with neighboring structures are very common. The greatest danger consists in the acute and often fatal disturbances which have been observed to follow immediately upon the operation, even when this is restricted to the very simple manipulations, and probably due to thyrotoxicosis.

In the opinion of Kausch, bilateral wedge-shaped excision of the goiter, according to Mikulicz, is preferable to unilateral extirpation (Kocher's operation), largely on account of the better safeguarding of the recurrent laryngeal nerve and the parathyroids. Berry, however, has been for many years "in the habit of removing such portions of the thyroid gland as seemed advisable, without paying any attention whatever to the parathyroids." There is a tendency to credit a persistent thymus with a considerable part in the pathogenesis of systemic goiter. It is important that this factor be borne in mind in the treatment of the disease.

Vascular Ligation.—Ligation of the superior and inferior thyroid arteries, on one or both sides, in one or several sessions, has been recommended in order to induce atrophy of the goiter, especially in the rapidly growing parenchymatous goiters of youthful individuals, in cases of systemic goiter, and also as a preliminary operation with the hope of improving the condition enough to allow a more radical operation at a later time. In severe

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* Summary of article in the Journal of the Michigan State Medical Society, April, 1914.

cases successive ligation of first one and then another artery may be done under local anesthesia. Being more accessible, and not related to any important nerves, the superior thyroid arteries are usually selected for the ligature. Ligation of the inferior thyroid is a very difficult and rather severe procedure, which should be reserved for special cases. The place of election for the ligature is directly internal to the point where the thyroid artery crosses the common carotid. The ligature is applied flush with the carotid, at a distance from the gland, and therefore from the recurrent nerve. The chief difficulty is referable to the chronic inflammation of the tissues surrounding the goiter. The mortality of vascular ligation, both single and double, in the worst types of the disease, in Mayo's experience fully equaled or exceeded the mortality of thyroidectomy. The method, however, now has an accredited position in the treatment of systemic goiter.

Selection of Operative Method.—In the unilateral type of systemic goiter, always favorable for operative interference, three-fifths of the goiter may be removed after the patient has been prepared by improving the general condition. Kocher considers operative procedures indicated in all goiter cases where an increased function of the thyroid gland can be demonstrated by clinical observation and examination of the blood. Two or three of the main arteries may be tied, first on one side, then on both sides. In case the result is not sufficient, a portion of the goiter may be extirpated at a third session.

Vascular ligation and partial thyroidectomy have been combined in such a way that unilateral excision is performed with ligation of an artery of the opposite side. This procedure is advocated by Landstroemme. In recurrent goiters an attempt may be made to induce atrophy of the remaining lobe through application of a ligature around one or both of the remaining arteries. If the reaction after the ligation of the vessels at the left upper pole be not severe, the right lobe, the isthmus, and possibly a portion of the left lobe are removed by Mayo at a second operation.

Operative Results.—Definite end-results were compiled in 320 of Kocher's operative cases. Complete cure was obtained in 150 patients, while 148 still presented individual symptoms of the disease, such as protuberant eyes or functional disturbances of thyroid origin, but with marked general improvement. The outcome was unsatisfactory in only 22 cases, either because the operation could not be completed, on account of recurrence, or because secondary disturbances of the kidneys or the liver failed to subside after the operation.

Of 167 patients operated in the Mayo clinics, 70 per cent. were cured; 19 per cent. improved; 5.8 per cent. slightly improved, and 5.2 per cent. not improved.

Klose's statistics, dealing with 298 cases, show 64 per cent. cures (2 to 18 years); 24 per cent. improvements; 3 per cent. not cured; 2 per cent. recurrences, and 22 cases, 7 per cent., deaths.

Concerning the functional results after operative procedures, the dyspnea and dysphagia which most frequently require intervention are amen-

able to improvement, provided they are due to the goitrous enlargement itself. Nearly asphyxiated patients not uncommonly regain free and easy respiration on the day of the operation. Difficulty in swallowing is apt to persist and even increase during the first week following the operation, after which time it gradually subsides. As soon as the operation has stopped, there is usually an end of the cardiovascular disturbances, such as tachycardia, palpitation, or persistent edema of an upper extremity. The results are not so positive when the structure of the myocardium has been affected, although even in these cases there is often a striking improvement. Aside from exceptionally unfortunate cases, in which myxedema follows even on limited resections, the signs of thyroid insufficiency gradually subside, the remaining lobules of the gland assuming increased activity.

The recurrent nerves, being in closest contact with the goiter, are apt to be profoundly altered by it. In some cases, where the muscles of the larynx had not become entirely atrophied, the removal of the thyroid swelling has been known to relieve even total laryngoplegia. In several observations of Roux and of the author the patient's hoarse and goitrous voice became perfectly normal after the operation. Bérard noted two cases in which the ablation of the goiter relieved neuralgic disturbances of the upper extremity, with incipient atrophy of the muscles of the shoulder.

ACTIVITY OF THE BRAIN AND ADRENALS IN RESPONSE TO SPECIFIC STIMULI.*

By F. W. HITCHINGS, M.D.; H. G. SLOAN, M.D., and J. B. AUSTIN, M.D.,
CLEVELAND, O.

Report of 66 experiments undertaken to ascertain some of the conditions which activate the adrenal glands, and determine more exactly this relation. The method of testing adrenal activity used was that originated by Cannon. The test depends on two facts: (1) that epinephrin inhibits the activity of smooth muscle fibers of the intestines; (2) it is a readily oxidizable substance. Using a segment of small intestine of a urethanized rabbit, contracting rhythmically in warm oxygenized blood, and recording its contractions on a smoked drum, blood from the animal under experiment is tested as a control. If the intestine continues to write the assumption is that the blood contains no epinephrin. The animal is then given, *e.g.*, a bacterial toxin, and a double amount of blood taken as soon as the toxin has produced its effects. Part of this blood is used for the epinephrin test. If no inhibition of the intestine be produced the experiment ends at this point. If it be produced the second portion of blood is allowed to stand for twenty-five minutes in order to allow the epinephrin to oxidize, and then the third, or oxidization, test is made. If the oxidization test be negative the assumption is that the

* Summary of article in the Cleveland Medical Journal, October, 1913.

substance that caused the inhibition was oxidizable, and epinephrin is the only substance in the body that produces inhibition of the intestine which can be oxidized in twenty-five minutes. If, on the other hand, a second inhibition be obtained the chances are that the agent used is still present in the blood in sufficient amount to cause it directly. In a typical experiment with the control test negative, the toxin test positive, and the oxidation test negative, the assumption is that the toxin, or whatever other activator was used, caused the injection (discharge) into the blood of epinephrin from the adrenal glands. It was found that epinephrin production caused by peptone is prevented by blocking the adrenal nerves, whether this be done by severing the splanchnic nerves (major and minor); by blocking them with a local anesthetic; by cutting under and around the glands, but leaving the adrenal vein intact; by clamping off the glands, and, finally, by removing the glands altogether. It was also found that with the glands left intact large doses of morphine will likewise prevent the epinephrin reaction.

Substances experimented with included the toxins of gonococci, of streptococci, of staphylococci, of colon bacilli, of tetanus bacilli, and of diphtheria; foreign proteids, indol and skatol, leucin, creatin, feces extract, strychnine, morphine, phenol, Witte's peptone, sheep serum, ox serum, and kitten serum. All of these seemed to cause adrenal activation. Narcotics and anesthetics caused no increased output of epinephrin. The psychic strain of inducing anesthesia usually caused epinephrin output, and in consequence it was always necessary to wait twenty-five minutes before testing the control blood. As a corollary of experiments in which the splanchnic nerves were cut it became evident that epinephrin-activating agents acted through the central nervous system rather than directly or through a hormone. The various agents which caused increased epinephrin output caused either fever or motor activity, while the agents which caused no increased epinephrin output, or which diminished it, were either neutral as to motion and fever or diminished them. There was observed in cats an epinephrin reaction after a heavy emotional stress, the cat being subjected to a seance of great rage and fear by having a muzzled dog try to fight with it. To find out whether the fear and rage activation of the adrenal gland operates directly through the nerve connection between the brain and the adrenal, or indirectly through a hormone action, the adrenal supply of cats was interrupted by dividing the major splanchnic nerves on both sides. Then after several minutes, when the cats were otherwise entirely normal, they were again subjected to intense emotion, rage and fear being produced as before. There was no epinephrin reaction in any of these animals, *i.e.*, the adrenal glands must have been activated from the brain.

Additional studies were made, consisting in observation of the changes occurring in the nerve-cells in the experiments already described, as well as in certain other conditions. The cells were classified as hyperchromatic, active, fatigued, or exhausted. One of the striking facts was the rapid production in many cases of a hyperchromatic condition. With the return to normal this hyperchromatism disappeared in from four to five hours, but if

the stimulus was extreme and long continued the hyperchromatic stage did not last long and most of the cells were found in the so-called fatigued state; and if the stimulus persisted, the cells went on to the exhausted state. Whatever the cause of the changes in the brain-cells, it was found that the cortex and the cerebellum showed more marked changes than did the base of the brain and the cord. Of great significance was the fact that all the agents that produced an increase of epinephrin output caused also a hyperchromatism of the brain followed by exhaustion. It mattered not whether this stimulating agent was physical exertion in running, in fighting, or in convulsions; was the emotion of fear or of anger, or a reaction to anaphylaxis, to toxins, to indol, skatol, foreign proteids, or strychnine—in every case hyperchromatism and increase of epinephrin output went hand in hand.

After the injection of a toxin or of live bacilli the hyperchromatic state was very fleeting, and unless the brain was examined in a very short time this stage gave way to that of fatigue. After the injection of an extract of feces, of skatol, or of indol the cells were nearly all fatigued in one-half hour. With tetanus toxin there was fatigue and some exhaustion after one-half hour. Among drugs, sodium salicylate, leucin, creatin, and nicotine gave a marked hyperchromatic state after one-half hour. Injection of epinephrin gave an extreme hyperchromatic state, which did not change to the fatigued state for five hours. Injection of a dog's own macerated thyroid gland gave a decided increase in the hyperchromatic cells. Injection of thyroid extract, 8 grains, resulted in slight hyperchromatism after thirty-seven minutes. In ten minutes after a single physiologic dose of strychnine there was marked hyperchromatism. After two such doses the number of hyperchromatic cells decreased and the fatigued cells increased in number. After double adrenalectomy, injection of a single physiologic dose of strychnine produced only a slight degree of hyperchromatism, neither as marked nor as constant as in the animal with the adrenals intact. There was a rapid loss of the stainable material after a removal of both adrenals. After the removal of the entire pancreas, on the other hand, the cells were all hyperchromatic and active.

RÔLE OF OVARIAN DISEASE IN THE PRODUCTION OF STERILITY.*

By GEORGE W. KOSMAK, M.D.,

NEW YORK, N. Y.

Of ovulation, in respect to the time at which it takes place in relation to the menstrual periods, we are still more or less in ignorance, and whether each menstrual period is necessarily accompanied by the discharge of an ovum cannot be stated definitely. In the presence of a cystic ovary which

* Summary of article in the New York State Journal of Medicine, December, 1913.

does not functionate, menstruation and apparently ovulation go on regularly, but the author has been impressed with the idea that although the menstrual function is apparently not inhibited in such cases, a Graafian follicle with its contained ovum does not always rupture on each occasion, for in many instances where such disease of the ovary is present sterility is an accompaniment. He believes that marked cystic degeneration of the ovaries is the central and important factor in the production of the sterility in certain instances. In a case which he reports it seemed clear that the irritation and disturbance produced by the presence of a cystic ovary had in itself acted as a bar to successful fertilization, conception taking place soon after the diseased ovary had been removed. It would be considered radical to advocate the removal of a cystic ovary in all such cases, however, particularly if the enlargement was not of a marked degree and likewise if instead of a cystic ovary one were dealing with adnexal tissues that were the seat of inflammatory processes. Yet it might appear advisable to do this if children were desired and this lesion on the part of the mother was discovered to be the only obstruction to pregnancy. While such ovarian disease may not be the only cause in the individual case, it undoubtedly constitutes a contributing factor and may possibly be of greater moment than abnormalities in position, etc., of the uterus and cervix.

One often finds that the removal of a diseased ovary tends not only to relieve specific symptoms referable to it, but also apparently to cause increased function on the other side.

In collecting a series of 45 cases from various operators the author was desirous of obtaining information not only as regards the relief of sterility, but also as to the effect of the removal of one ovary on the sex of the child. The attempt in the latter direction was, however, unsuccessful, as in the entire series there were 16 male and 13 female infants following the removal of the right ovary and 16 male and 15 female infants following the removal of the left ovary—a fairly equal division of the sexes.

In the 19 cases of the series in which pregnancy had not preceded operation, the öophorectomy was done in 3 women while they were still single and in 7 in a year or less after marriage. In the remainder the operation was done in from four to ten years after marriage. In 3 cases pregnancy followed in less than a year, in 10 cases in less than two years, and in 3 cases between five and six years (although several abortions occurred in one case of the latter series). As regards the sex of these children, in cases where the left ovary was removed there were 8 males and 9 females subsequently born, and where the right was removed there were 5 males and 8 females.

On the whole, there seems to be no question from the observations thus far made by a number of writers that the question of sterility in an otherwise healthy woman must depend on an aggregation of factors rather than on a single lesion, and that in every instance the entire pelvic contents must be subjected to careful study. In a certain proportion of cases, however, the removal of an ovary which is diseased undoubtedly contributes to increased function in the other, as evidenced by an improvement in the menstrual conditions and the greater possibility of subsequent pregnancies.

USE OF EPINEPHRIN FOR PROPHYLACTIC PURPOSES BEFORE SALVARSAN INJECTIONS.*

By DR. GALLIOT,

PARIS, FRANCE.

Whatever precautions be taken to secure a pure, undecomposed solution of salvarsan or neosalvarsan for injection, a certain number of patients is always met with who are hypersensitive to the drug, sometimes to salvarsan only, sometimes to neosalvarsan only, at times even to both. Milian's procedure, consisting in the previous injection of 1 mg. ($\frac{1}{65}$ grain) of epinephrin, appears to be the best method of prophylaxis against these "nitritoid attacks" brought on by the specific remedies. The author has used epinephrin for the same purpose, but has given it by the mouth, 15 to 20 drops of the 1 : 1000 solution being administered in a little water ten to fifteen minutes before the injection. Excellent results are claimed for this simple measure. Thus, 2 patients are referred to who had always experienced a "nitritoid attack" after neosalvarsan injections. Immediately after the injection the face would become congested, a tingling sensation in the throat be complained of, and nausea and even sometimes vomiting accompany these phenomena. No further symptoms developed after epinephrin had been given as prophylactic, the patients experiencing no discomfort of any kind, either on the day of injection or subsequently. These patients had already received several injections of 0.3 to 0.45 Gm. of neosalvarsan, always accompanied by mild nitritoid attacks, and the author had not thought it wise to exceed the doses mentioned. As the congestive disturbances entirely disappeared after the use of epinephrin had been begun, however, 0.6 Gm. was then injected, without any difficulty resulting. The epinephrin had not yet been tried by mouth in cases of nitritoid attack due to old salvarsan. In view of the simplicity and harmlessness of the measure, however, it is likely to be of some service, more particularly in timorous patients.

PATHOGENESIS OF EXOPHTHALMOS IN BASEDOW'S DISEASE.†

By DR. MAURICE,

LYONS, FRANCE.

Exophthalmos is considered by the author the sole truly typical sign of Basedow's disease. If, as a few maintain, tachycardia and thyroid enlargement are sufficient to warrant a diagnosis of this affection, what term should be applied to those cases in which, in association with thyroid enlargement,

* Summary of article in Paris médical, January 24, 1914.

† Summary of article in Lyon médical, October 20, 1912.

tachycardia, and nervousness, there occurs a manifest enophthalmos? It might be stated that such cases would later pass into Basedow's disease—that they are goiter cases on the way to becoming exophthalmic. Such a supposition is often disproved, however, by the facts. Signs of hypothyroidism are numerous in these cases; the successful treatment is that by thyroid extract, and the usual course of the disease is that of thyroid instability terminating in cachexia of myxedematous type.

Exophthalmos is a manifestation of excitation of the cervical sympathetic. The latter leads to dilatation of the postocular vessels causing propulsion of the eyeball forward (Abadie), or to contraction of the smooth muscle of Tenon's capsule or of Landström's fibers, such contraction projecting the eye anteriorly (Jaboulay). The last theory alone warrants attention, but thus formulated it is not complete. The excitation of the smooth muscle fibers cannot attain its maximum effect unless associated with a paresis of the extraocular muscles. The existence of such paresis is indicated by the frequency of external ophthalmoplegia in Basedow's disease (Ballet, Bristowe) and of convergence paralysis (Moebius's sign); likewise by the observation of histologic changes in the ocular muscles (Bristowe), and, in a general way, by the myotonic state of the striated muscles in Basedow cases.

Whence originates the excitation of the cervical sympathetic which is the cause of the exophthalmos? Is it due to the thyroid secretion? Experiments by Ballet and Henriquez, Fürth and Schwarz, Lépine, and others have shown that among the symptoms of artificially induced hyperthyroidism tachycardia is frequent, but exophthalmos quite rare. Boinet, in a student who had ingested 6 to 8 sheeps' thyroids, witnessed mental disturbance, intense palpitation, and tremor, but no exophthalmos. Kostlivy has shown that most cases of exophthalmic goiter present both lymphocytosis and epinephrinemia. Kraus, Friedenthal, A. Fränkel, Trendelenburg, and Bröking have all confirmed the latter, and, according to Gallavardin, the epinephrinemia accounts for the slight rise in blood-pressure noted in exophthalmic goiter. High blood-pressure and exophthalmos are also often simultaneously present in chronic nephritis, and a number of authors have attributed the high pressure in these cases to hypertrophy of the adrenals. The author is inclined to believe that this latter condition also accounts for the high pressure and exophthalmos in Basedow's disease. The thyroid secretion is not, indeed, antagonistic to that of the adrenals, but rather stimulates it and sensitizes the organism to the action of epinephrin. From the synergistic action of these two secretions arises a maximal degree of sympatheticotonic effect and a more marked depression of the central nervous system.

In all progressive cases of exophthalmic goiter the attentive observer, according to Maurice, can detect the passage of the disease from a thyroid to an adrenal phase. The patient, previously presenting thyrotoxic symptoms such as small goiter, tachycardia, nervousness, tremor, etc., at the time of transition to the adrenal phase develops slowing of the pulse with high vascular tension perceptible to the palpating finger, propulsion of the eyeballs with a tendency to paralysis of their straight muscles, and, finally, a neuras-

thenic state with anorexia, physical weakness, and loss of interest in life. In one of the author's patients, *e.g.*, there appeared six months after the onset of Basedow's disease a very marked bilateral exophthalmos. At the same time the pulse rate dropped from 200 to 140, and the Pachon sphygmomanometer showed a systolic pressure of 180 mm. Hg.

The synergistic hyperfunctioning of the thyroid and medullary portion of the adrenals reduces, in particular, the functional vitality of the medullary centers of the pneumogastrics; the sympathetic function, on the other hand, is enhanced. It is this loss of equilibrium between the two functions which leads to the typical Basedow syndrome, with the exophthalmos. The labors of Hess and Eppinger, of Falta, and of Gautrelet have, indeed, demonstrated the close relations existing, on the one hand, between the reproductive glands, pancreas, and central nervous system, and, on the other, between the thyroid, adrenals, and sympathetic. Lortat-Jacob and Laubry, pupils of Landouzy and Vaquez, have shown, furthermore, that orchidectomy or oöphorectomy greatly favors the production of atheroma. In Basedow's disease, in which amenorrhea and hence ovarian insufficiency are frequent, and in which epinephrinemia has been noted, arteriosclerosis accordingly threatens. This supplies an additional feature of the exophthalmos-producing adrenal phase of exophthalmic goiter.

Thus it may be concluded, according to Maurice, that a case of exophthalmic goiter running its full course generally passes through a phase of excessive adrenal functioning, manifested clinically by exophthalmos, increased pulse tension, and symptoms of visceral arteriosclerosis. Operative or postoperative untoward phenomena are to be feared in this stage of the disease, and are due either to degeneration of the nerve-cells of the pneumogastric nuclei or to cardioarterial sclerosis, which does not permit of conducting general anesthesia under favorable conditions. Medical treatment, however, is without danger. Opotherapy as practised by Brown-Séquard, conducted with perseverance, especially with appropriate diet and drug treatment, gives satisfactory results. It has enabled the author to restore to an agreeable, sociable life patients long since deprived of physical and mental stamina, the exophthalmos, goiter, and tachycardia meanwhile likewise showing notable improvement.

IODINE AND PHOSPHORUS CONTENTS, SIZE, AND PHYSIOLOGIC ACTIVITY OF THE FETAL THYROID GLAND.*

By FREDERIC FENGER,

CHICAGO, ILL.

In previous communications the author had shown that fetal thyroid tissue possesses a strong selective affinity for iodine, that the glands of beef fetuses contain an appreciable amount of iodine as early as the third month

* Summary of article in the Journal of Biological Chemistry, May, 1913.

of intrauterine life, or approximately six months before maturity, and that the iodine content increases proportionately with the age of the fetus. More recently, the glands from 705 beef fetuses six to nine months old were secured and analyzed within a short time after collection. It was found that the individual fetal thyroids varied enormously in size and materially in color. It was noticed also that fresh beef thyroids, containing 0.3 per cent. or more of iodine on the dry fat-free basis, both from fetuses and adult animals, possessed a peculiar, pungent, garlic-like odor, resembling both that of phosphine and of phosphorus while undergoing oxidation. The odor was especially pronounced when the glands were cut open while they still retained the animal heat, and disappeared gradually upon chilling. The usual preliminary and identification tests for free phosphorus, free iodine, and hydrogen sulphide were all negative. It was, therefore, concluded that the substance causing the odor, if an iodine-phosphorus compound, must be an organic complex. That this is associated with or entirely dependent upon the quantity of iodine in thyroid combination was, however, very apparent.

Fetuses possessing enlarged glands, although otherwise apparently well proportioned, invariably were smaller than the fetuses with normal glands. The amounts of iodine in the normal fetal glands, in spite of considerable unevenness in size and age, were much more uniform throughout the entire year than those of the thyroids from full-grown animals and it seems apparent that the seasonal change in iodine content, which is so evident in the healthy glands from mature animals, is not pronounced in the normal fetal thyroid. Normal fetal glands are relatively larger and contain more iodine and phosphorus per unit of body weight than thyroids from fully mature animals. The male glands are somewhat larger than the female thyroids, the average weight being 9.9 Gm. for the male and 9.3 Gm. for the female, but the smaller female glands contain a higher percentage of iodine than the male glands. A striking feature was the high percentage of abnormally large fetal glands. The percentage of goitrous glands in grown animals, even during the cold season, was far inferior to that found in the fetuses. There is a gradual decrease in the percentage of affected glands as the animals mature. The demand for iodine in the rapid fetal metabolism and growth, in certain instances, evidently may exceed the supply available in the pregnant animal. This supply may be sufficient for the maintenance of the maternal metabolism, leaving the adult thyroid normal, but not sufficient to prevent iodine starvation and enlargement of the fetal gland.

In spite of their size the enlarged glands contained less total iodine and much more total phosphorus than the normal thyroids. This peculiar condition held true of fetal as well as adult glands. Since accumulation of organic phosphates does not occur in normal glands of average iodine content, the idea readily suggests itself that iodine in thyroid combination may be a factor of vital importance in the phosphorus metabolism of the body.

Abstracts from Current Literature on the Internal Secretions

Syndromes from Adrenal Disease.—The author refers particularly to tumors in the adrenal glands, or simple hyperplasia, stating that, in his experience and judging from the literature, these conditions are invariably accompanied by atrophy of the internal genital organs. The typical findings are proliferation of the adrenal cortex plus atrophy of the ovary. The disturbances which result from this combination are of four types: (1) adrenal pseudohermaphroditism; (2) adrenal virilism; (3) the menstrual type, and (4) the obstetric type.

1. In the first form the secondary sexual characters develop early and are of a male type, so that pseudohermaphroditism may be regarded as a sign of simple hypertrophy of the adrenal cortex. 2. When there is an actual tumor in this cortex the male characteristics become exaggenerated, with obesity, hypertrichosis, and menstrual disturbances. In young girls puberty comes on early and with male characters; in a boy the sexual development is premature. In men there is a tendency to premature general weakness, and women become masculine in their muscular strength at first, but then nervous, mental symptoms developing, with irritability and dread. 3. Dysmenorrhea is the principal symptom of the third or menstrual type in women over 20. There is always more or less hypertrichosis or pigmentation, and there may be symptoms of exophthalmic goiter. 4. The obstetric type is like the others except that it manifests itself first with a pregnancy, usually extrauterine.

In one of the author's cases the patient died in convulsions and coma, due to hemorrhage in the adrenal, which was the seat of an adenoma. Ovarian extract therapy supplies the lacking internal secretion of the ovary in this class of cases, and is the logical treatment combined with removal of the cause, the adrenal tumor, when practicable. Wendel has compiled 6 lumbar operations for adrenal tumor, with 4 deaths, and 17 transperitoneal operations, with only 7 deaths. A. Gallais (Revue de gynécologie, January, 1914; Journal of the American Medical Association, March 28, 1914).

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Exophthalmic Goiter Cured by Ligation of One Superior Thyroid Artery.—Operations on the thyroid should be performed under local anesthesia whenever possible, the advantage consisting in the nerve-block, which completely isolates the brain from the field of operation. This prevents the shock and exhaustion of the brain-cells, which are largely responsible for the severe reaction that frequently follows thyroid operations. Ligation should be preceded by several days' rest in bed while the operator gains the confidence of the patient. This eliminates much of

the shock due to fear. One hour before operation the patient should receive a dose of morphine or morphine and hyoscine, sufficient to allay restlessness and prevent psychic shock.

In the case the history of which is given by the author, ligation of the right superior thyroid was done in the patient's home under local anesthesia. The patient went back to his work two weeks after the ligation and has not missed a day from work since then. He received ergotin, 1 grain, with quinine hydrobromide, 2 grains, and thyroidectin, 3 grains, three times daily, for two months. He then noticed that there were intervals of several days without the pulse rate increasing on exertion. During the third month he took the medicine about half the time, then stopped it entirely, as all symptoms had gone. Two weeks after the ligation both thyroids began to enlarge symmetrically, this gradually increasing for six weeks, and for a short time the patient was unable to wear a collar; but the nervousness, insomnia, and psychic storms had disappeared and the tachycardia and exophthalmos were rapidly improving. In the third month the enlargement began to subside and within three weeks had entirely disappeared. L. F. Watson (Medical Record, September 27, 1913).

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Diabetes Insipidus and Infantilism.—Case of combined diabetes insipidus and infantilism. The patient was a young man aged 24. He had developed normally up to the age of 14. Shortly after a shock, sustained by involuntary immersion in cold water through falling out of a canoe, he began to pass large quantities of urine, 7 or 8 liters a day, and to suffer from polydipsia. These symptoms persisted, but there was never either sugar or albumin in the urine. At the age of 16 the patient's teeth all dropped out in the course of a few months as the result of painful ulceration of the gums. A year or two later generalized eczema of severe type appeared, and proved very intractable. On examination the youth was found to present well-marked signs of infantilism. There was no hair on the face or pubes, and only one or two sparse hairs in the axillæ. His voice had not "broken." There was double testicular atrophy, and the penis was very small, like an infant's. There was complete absence of sexual desire and power. No objective ocular signs were found, however, and the sella turcica was seen radioscopically to be of normal size and appearance. The patient's mental condition was good. While under observation he often passed as much as 10 liters of pale, limpid urine in the twenty-four hours. Hypophyseal, thyroid, testicular, and pancreatic extracts were tried in turn during four months, but all failed to modify the patient's symptoms materially. The authors are of the opinion that the condition was due to defective function of the pars intermedia, usually described as belonging to, or, at least, mainly associated with, the pars posterior or nervosa of the pituitary gland. P. Lereboullet, M. Faure-Beaulieu, and E. Vaucher (Nouvelle iconographie de la Salpêtrière, September-October, 1913; Lancet, February 21, 1914).

Case of Pluriglandular Insufficiency.—The patient was a Russian girl aged 24 of epileptic and diabetic ancestry. She had been normal in every way up to the age of 18 years, when she developed ophthalmoplegia. When approximately 20 years old she developed a species of myxedematous state, attended by suppression of the menses. A physician found glycosuria and a positive Wassermann reaction. Later the author discovered a spinal curvature. The progress of the case suggested myxedema to the exclusion of other affections. At the same time there was a shrinkage in the body measurements, owing to various deformities. The bone condition developed some resemblance to osteomalacia. Death occurred unexpectedly from erysipelas, thereby giving an opportunity for autopsy. Radiography had shown a normal sella turcica, but the hypophysis, normal in size, was found adherent to the bone and of firm consistence. Thymus remains were abundant, while the thyroid was abnormally small in both lobes. The pancreas was small, consisting largely of fat and connective tissue. The adrenals were normal to the naked eye. The ovaries were abnormally small and showed no Graafian follicles. The bones were very much thinned and brittle. The liver was fatty. The other organs were normal save for the heart, which exhibited the changes to be expected after death from erysipelas. The author explains this case on the assumption that the condition of the thyroid was responsible for myxedema and possibly for certain psychic manifestations, but beyond that he could not go, save perhaps to hold the abnormal pancreas responsible for the diabetes. The adrenal bodies alone of all the endocrine glands were normal, so that the case may be termed subtotal. In no other similar case reported has there been glycosuria. Masse (Berliner klinische Wochenschrift, January 19, 1914; Medical Record, February 14, 1914).

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Pituitary Extract in the Treatment of Rachitis.—The 16 children to whom the author administered pituitary extract belonged to the families of peasants or workmen and were subject to such unfavorable factors as damp dwellings, poor light, etc. In order to be able better to judge of the value of the treatment, care was taken not to modify the diet or environmental conditions of the little patients. For the earliest cases of the series 3 control children were also provided, *i.e.*, children with rickets and of about the same age as the others, but not receiving pituitary extract, magnesium oxide or lactose being given instead. When the treatment in the original cases was finished, the controls were themselves subjected to pituitary medication. From time to time the size of the fontanelle was noted as a measure of the effects of the treatment on osseous growth. In some children radiography was also availed of. Most of the children treated were 1 to 2 years of age, but were unable to walk, stand, or even, in some instances, to sit up. After a few weeks of pituitary treatment, these children were able to stand and began to walk, and at the same time the fontanelles began to close and the growth of the teeth was considerably accelerated. Osseous tenderness

gradually diminished, the children no longer crying when made to stand; a regular gain in body weight was noted, and the musculature became firmer. Combined administration of calcium carbonate with the pituitary extract did not seem to yield an improvement any more rapid than that afforded by the pituitary extract alone. K. Weiss (Semaine médicale, July 23, 1913).

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Action of Blood-serum upon Aqueous Organ Extracts.—Previous experiments had shown that the acute lethal action of intravenously injected aqueous organ extracts was diminished or abolished by fresh blood-serum. The work now reported confirmed this finding, and showed also that the extract and serum must be present in certain relative amounts and the mixture allowed to stand a certain period of time before injection, if the detoxication is to take place. The amount of serum required for neutralization of a dose of extract lethal in a rabbit of about 2400 Gm. weight was found to be from 0.5 to 1 c.c., and a preliminary period of fifteen minutes for interaction between the serum and extract was found necessary for complete detoxication of the latter. Perhaps this detoxication by fresh serum results from combination of the fibrinogen still remaining in the serum with the fibrin ferment or tissue coagulin existing in the aqueous extracts; or, this ferment may be rendered inactive by the serum in some other way. H. Dold (Berliner klinische Wochenschrift; Zentralblatt für innere Medizin, March 29, 1913).

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Relation of Thymus to Bony Growth.—The author's work points toward the thymus gland having some relation to the growth of bones. Its removal in young animals (rats and guinea-pigs) led to changes indistinguishable from those in human rickets, the animals showing imperfect growth. There occurred also enlargement of the thyroid gland. The author demonstrated the capacity of the thymus to regenerate. After partial thymectomy in rabbits there occurs a rapid regeneration, so that in a few days numerous cells and nuclei appear. The so-called embryonic lymph-cells became transformed into the true thymus-cells; these must, therefore, not be regarded as true lymph-cells, for the thymus is an epithelial organ. L. Aschoff (Lancet, August 16, 1913).

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Rôle of the Ductless Glands in the Genesis of Fibroma Molluscum Gravidarum.—Fibroma molluscum gravidarum, one of the hypertrophic disturbances of the skin arising in pregnancy, is due to cessation or inhibition of the ovarian function and to an increase in the activity of the pituitary and adrenal glands. The lesions of fibroma molluscum gravidarum usually disappear as involution from the pregnant state takes place. But in some instances they remain indefinitely: some of the growths retain their pigment; others lose it. S. M. Brickner (Journal of Surgery, Gynecology, and Obstetrics, October, 1913).

Action of Extracts of the Posterior Pituitary.—Injections of extracts of the posterior lobe of the pituitary in the rabbit cause disturbances of the auriculoventricular conduction apparently quite independent of any action on the vagi. Rabbits in which the vagi have been cut react in the same manner as unvagotomized animals, which permits of concluding that the pituitary preparation exerts a selective action on the fibers of His's bundle, of inhibitory nature and short duration. Claude, Porak, and Routier (Société de Biologie, Paris; Revue des sciences médicales, August, 1913).

* * *

Effect of Thyroid Extract on Epinephrin Glycosuria.—Thyroid extract, injected in combination with adrenal extract, causes a notable increase in the glycosuria produced by the latter. Addition of thyroid extract to Takamine's adrenalin likewise increased the resulting glycosuria. There is no exact relation, however, between the amount of sugar excreted and the amount of thyroid injected. The results are less striking when the two products are not mixed, but injected separately at two different points of the body. Garnier and Schulmann (Société de Biologie, Paris, February 21, 1914; Paris médical, February 28, 1914).

* * *

Route of Access to Tumors of the Pineal Body.—The author describes an operative procedure for exposure of the pineal similar to that followed by von Monaco for the purpose of freely exposing the central portions of the cerebrum in dogs. The several steps of the operation include extensive superior median craniotomy, ligation of the longitudinal sinus, retraction of the falx, separation of the two hemispheres, and partial splitting of the corpus callosum. F. Nassetti (Policlinica, xx, 11; Zentralblatt für Chirurgie, February 7, 1914).

* * *

The Hypophysis After Thyroidectomy.—Thyroid glands removed *in toto* from 12 adult rabbits. The hypophyses were always found heavier than in control animals. After some six months had elapsed from the date of experimentation, the pituitary was found to have increased to about three times its normal size. Degener (Quarterly Journal of Experimental Physiology, p. 111, 1913).

* * *

Pituitary Extract in Obstetric Practice.—The action of pituitary extract in post-partum uterine inertia is inferior to that of ergot derivatives. It is worth trying as a galactagogue and in post-partum retention of urine. A. Turenne (Annales de gynécologie et d'obstétrique, December 7, 1913).

* * *

Metabolic Effects of Thyroid.—The thyroid was found in dogs to hinder the assimilation of sugar. The parathyroid glands favored it. Edmunds (Journal of Pathology and Bacteriology, July, 1913).

Department on General Medicine

Original Articles

THE VALUE OF ANATOMY AS APPLIED TO THE DIAGNOSIS OF MEDICAL CONDITIONS.

By W. E. ROBERTSON, M.D.,
Professor of Medicine in Temple University,
PHILADELPHIA, PA.,
AND
JOHN B. ROXBY, M.D.,
Professor of Anatomy in Temple University,
SWARTHMORE, PA.

(*Concluded from the March issue.*)

2. Transferred Abdominal Pain in Intrathoracic Disease.

Although John Hilton, in the late fifties and early sixties of the last century, called attention to this comparatively frequent condition, citing illustrative cases, both unilateral and bilateral, many reports have been published in recent years of abdominal operations performed for supposed abdominal conditions, where nothing was discovered at the time, but which were later diagnosed as pneumonia with an associated pleuritis, serous or other form of pleurisy, aneurism, a new growth, or even spinal caries, mediastinitis, or pleuropericarditis. One writer, in a paper in the London Lancet some years ago, described 11 such cases in which abdominal section had been unnecessarily performed. In the majority of instances, when abdominal rigidity and pain are due to intrathoracic lesions, the lesion is unilateral and situated in the lower portion of the thorax, for only the last six intercostal nerves send their anterior branches of supply to ramify in the preperitoneal tissue of the abdominal wall, as Ramström has shown. When pain and rigidity are bilateral, one is dealing either with some condition in which the pleuras of both sides are implicated or with a caries or new growth, these latter being instances of root-zone involvement through pressure, though, of course, pressure may be exerted on one side only, in which case plus tension and tenderness will occur in some portion of the abdominal wall of the same side, *i.e.*, unilaterally. Peritonitis, typhoid perforation, appendicitis, and disease of the gall-bladder may all be closely mimicked when the actual lesion is within the thorax, and in numerous instances operation has been performed unnecessarily.

The natural inference is that every case of abdominal pain and rigidity demands a careful physical examination of the chest as well as the abdomen

in order that intrathoracic disease may be excluded as the direct exciting cause or possible complicating factor. Since abdominal pain, tenderness, and plus tension, varying in position and intensity according to the etiology, may result from intrathoracic and intra-abdominal disease or pressure, and in the latter group especially, as the autonomic cerebrospinal arc is everywhere dependent upon them for its completion, and, finally, because of their import in lumbosacral and sacroiliac disease, as well as various pelvic and genitourinary diseases and reflex symptoms, we have included both lumbar and sacral nerve groups in describing the distribution of a thoracic nerve.

To understand the production of an area of transferred pain, and at the same time to appreciate muscular phenomena such as spasticity in somatic musculature, in the presence of intrathoracic and intra-abdominal disease, it will be necessary to study the distribution of the thoracic, thoracicolumbar, and lumbosacral nerves, together with their sympathetic relations.

A typical thoracic nerve is traced as follows: Leaving the cord as a mixed nerve, there is first given off the posterior primary division, which passes dorsally through the musculature of the back, and sends cutaneous filaments to the overlying integument. Ventrad to this branching, the trunk, which we will now call the anterior primary branch, passes, to be at once joined to the sympathetic cord by means of the rami communicantes. Entering the interval between the anterior costotransverse ligaments and the external intercostal muscles, the nerve comes to lie in the intercostal plane between the external and internal intercostal muscles, and thence courses forward, giving off the lateral cutaneous branches. Proceeding to the mesial limit of the external intercostal muscles, it is then covered by the anterior intercostal membrane as it lies upon the internal intercostal muscle, and as an apparent terminal the anterior cutaneous branch is given off. This description will answer for all of the thoracic group save the first, second, and twelfth.

The *first* thoracic sends a considerable proportion of its fibers into the brachial plexus. A lateral cutaneous branch is rare, and the anterior cutaneous may be wanting.

The *second* thoracic contributes a branch known as the intercostohumeral, which is directly related to the lesser internal cutaneous of the brachial plexus (reflected arm pain in angina pectoris).

The *twelfth* thoracic or subcostal is below the last rib, and its lateral cutaneous branch not only supplies abdominal integument, but passes downward over the crest of the ilium, supplying the gluteal integument as far as the upper level of the great trochanter.

The thoracic nerves may be divided into two groups: The upper, more horizontally placed seven, properly called thoracic nerves, and the lower more obliquely placed five, readily called thoracicoabdominal. The muscular branches of the upper group supply the following muscles: External and internal intercostals, subcostals, levatores costarum, serratus posticus superior, triangularis sterni, and rectus abdominis (upper portion). The lower

group supply: External and internal intercostals, subcostals, levatores costarum, serratus posticus inferior, external and internal oblique, transversalis, rectus abdominis, pyramidalis, and diaphragm. The diaphragm, according to Luschka, receives twigs from the lower six thoracics. The cutaneous distribution also deserves mention. The lateral cutaneous branches of the upper six pierce the external intercostals, and those of the lower six pierce the external oblique in a line about midway between the midaxillary and mammary lines. Once the lateral cutaneous branches reach the integument they divide into an anterior and posterior set. The posterior pass backward to the field occupied by the lateral twigs of the posterior primary branches, while the anterior twigs pass ventrally to the field occupied by the anterior cutaneous branches. The anterior cutaneous branches of the trunk of the nerve constitute the terminal branches in both upper and lower groups. Those of the upper six pierce the pectoralis major near the sternal border, and supply the adjacent integument in the parasternal region. Those of the lower six vary as to the line of perforation, but, generally speaking, they puncture the ventral rectus sheath somewhere between the linea alba and the linea semilunaris. Now, it is to be noted that the anterior cutaneous branches of the seventh supply the integument in the region of the umbilicus, and that those of the twelfth supply the region midway between the umbilicus and pubic crest.

Next in logical sequence we shall consider the distribution of some of the branches of the lumbosacral plexus.

The iliohypogastric, coming off from the first lumbar nerve, and communicating with the twelfth above and the ilioinguinal below, is the analogue of the last thoracic. Its iliac branch, corresponding to a lateral cutaneous branch of the thoracic group, pierces the internal and external oblique muscles above the middle of the crest of the ilium, is deflected downward, and is distributed to the integument covering the gluteal medius and tensor fasciæ femoris. It inosculates with the lateral cutaneous branch, continues the course of the nerve trunk, and, just above and mesad to the external abdominal ring, it traverses a foramen in the aponeurosis of the external oblique, and terminates in filaments of supply to the integument of the suprapubic region. The muscular twigs of the iliohypogastric supply the transversalis, internal and external oblique muscles.

The ilioinguinal, springing from the twelfth thoracic, or first lumbar, or second lumbar, or the loop between first and second lumbar, parallels the iliohypogastric. It crosses the quadratus lumborum *behind* the kidney, pierces the transversalis, lodges in the cleft between it and the internal oblique, and then inosculates with the iliohypogastric. Continuing forward, it enters the inguinal canal, and finally emerges from the external ring or its lateral pillar, below and to the outer side of the spermatic cord. It contributes filaments to the transversalis, internal oblique, and external oblique, and sends branches to the integument of the upper, inner thigh region, pubic region, base of the penis and scrotum in the male, mons veneris, and greater labium in the female.

The genitocrural, from the first loop of the plexus and second lumbar nerve, divides into genital and crural branches. The genital branch contains first lumbar fibers, passes forward through the inguinal canal, and enters the scrotum. It supplies the external iliac artery, cremaster muscle, integument of the scrotum, and adjacent thigh region. In the female it accompanies the round ligament, and is distributed to the integument overlying the greater labium. It communicates with the ilioinguinal and with the spermatic plexus of the sympathetic. The crural branch is distributed to the upper ventral thigh region. The lateral cutaneous branch of the lumbosacral plexus, from the first and second lumbar, or second and third, is distributed by two terminal branches. The anterior one supplies the ventrolateral thigh region as far as the knee. The posterior one is distributed over the tensor fasciæ femoris and the inferior gluteal region.

The anterior crural branch of the plexus, together with the obturator and great sciatic, need no description. It is to be kept in mind, however, that the lesser sciatic nerve is a cutaneous nerve and that it supplies sensory fibers to perineum, scrotum, base of penis in the male, labium magnus in the female, and integument between coccyx and greater trochanter, and that it courses downward through the dorsal thigh region to the popliteal and upper calf regions.

Now consider the related sympathetics in order to establish the interrelation between the viscera and the somatic nerve distribution. A few general principles must be laid down, the first being that the direct method of communication between the visceral sympathetics—including gangliated cord, prevertebral, collateral, and terminal ganglia—and the somatic nerves (mixed) is by way of the rami communicantes, both white and gray. This intimacy establishes the communication with the spinal cord through the relation which the sympathetic axons and dendrites bear to the cord.

Secondly, and we can do best by quoting Piersol's text: "The white rami are composed almost exclusively of the visceral branches of certain of the spinal nerves, which use the sympathetic system as the pathway by which they are to arrive at their destination. They consist of fasciculi of medullated fibers derived from both the anterior and posterior roots of the spinal nerves. The fibers arising from the anterior root are called the splanchnic efferent, and those from the posterior root the splanchnic afferent. Not all of the spinal nerves, however, give off white rami, these strands of communication forming a thoracicolumbar group from the first or second thoracic to the second or third lumbar nerve inclusive, and a sacral group derived from the second and third, or third and fourth, sacral nerves. The cervical nerves do not give off white rami. The splanchnic afferents transmit motor impulses to the unstriped muscles of the vessels and viscera, and secretory ones to the glands of the splanchnic area. The splanchnic afferents transmit sensory impulses from the viscera to the spinal cord." Again, "the gray rami are bundles of axones of sympathetic neurones which pass from the gangliated cord to each and all of the spinal nerves."

Thus, it will be comprehended that sympathetic filaments are provided in the somatic nerve distribution.

Now, applying the theory of transmission of pain sense through sympathetic nerves of the viscera, and acceding the interrelation established with somatic distribution, reflex pain areas become not only plausible, but clinically of great import. This interrelation also serves to explain the phenomenon of muscular spasticity.

Clinical observers cite, then, thoracic and abdominal evidences, so far as the skeletal muscles are concerned, in the presence of intrathoracic and intra-abdominal diseases, and a knowledge of anatomy will materially aid in locating the focus of irritation, according to the site of muscular rigidity and tenderness.

3. Clinical Significance of the Autonomic Cerebrospinal Arc.

Stimulation of any special sense nerve or nerve of ordinary sensation in any part of its course, from root to periphery, gives rise solely to peripheral manifestations. Thus, irritation of any part of the optic tract from cortex to retina is manifested in some form of light or color; of the auditory nerve, as some form of sound, and of a sensory nerve as numbness, tingling, burning, or pain in the general sense. These facts are universally employed in a diagnostic sense, and in this sense, then, pain must be looked upon as beneficent, as it directs our attention to a part and at the same time compels rest on the part of the patient. The thoracic and abdominal viscera, however, possess no sensory nerves, nor does the peritoneum, visceral or parietal, though the preperitoneal tissue is richly supplied with sensory filaments. How, then, can we explain the pain of angina pectoris, gastric ulcer, gall-stone, and renal colic; the vague discomfort of an enlarged and congested liver, especially noted in cases of failing right heart; the peculiar sensations attendant upon well-marked visceroptosis; the shoulder pain in gall-bladder disease, in some instances extending down the outer side of the arm; the hypogastric pain of a distended urinary bladder, and perineal and genital pain when fundus irritation exists, as in calculus at the base of the bladder; retention of urine after perineal suture for lacerations, pain in the right inferior quadrant in appendicitis, etc.? Too much time would be consumed in taking each of these up in detail, but they all permit of ready explanation on anatomic grounds, except perhaps the unilateral phenomena of appendicitis. If the organs and parts included in the above category were themselves possessed of sensory filaments, the pain would be limited to the confines of their boundaries. This is manifestly not the case. Note the pain of a gastric ulcer, which is fixed despite the movements of the organ during respiration. Even granting that it may be fixed by adhesions, no such argument can be adduced in the case of shoulder and arm pain in gall-bladder disease or the widespread thoracic arm, and even abdominal pain in angina pectoris.

The viscera are richly supplied with autonomic or sympathetic fibers which are afferent,—or both afferent and efferent in some instances, as in the splanchnics. These enter the cord at various levels and are there in

relation with cerebrospinal nerves, efferent, which emerge at the same levels. Irritation in an autonomic area is, therefore, conveyed to some definite level of the cord, depending on the organ involved; and flowing over to the centers of cerebrospinal nerves, it becomes a visceromotor reflex, expressed clinically as hyperesthesia, hyperalgesia, and muscular rigidity. Hence the extent of peripheral manifestation is not measured by the size nor position of an organ, but by its anatomic associations and the degree of irritation. In no other way could we explain the pain association of such widely removed parts as the kidney and testicle, gall-bladder and shoulder, and retention of urine in perineal suture,—though the latter occurs only when the skin is included in the suture. From the standpoint of diagnosis, this is a topic which deserves painstaking study, for it often sheds light where otherwise nought but darkness would prevail.

4. Sacroiliac Disease and Possible Errors in Diagnosis.

The region of the lumbar and sacral vertebræ, together with the sacroiliac joint and the related structures, merit attention.

It was formerly taught that the sacroiliac joint was a true synchondrosis, but the present view is that the joint, while classed as amphiarthrodial, presents some of the features of a diarthrosis. Thus, while there is to a certain degree interlocking of the sacrum and ilium, there is some motion, and a limited synovial fluid space. Inflammatory disease and traumatism, therefore, do take place. Ventrad to the joint, and in relation with the lumbar vertebræ, is the psoas magnus muscle. This muscle, arising from the front of the bases and lower border of the transverse processes of the lumbar vertebræ, as well as from the lateral aspect of the center of the last thoracic and all the lumbar vertebræ, including the discs, has imbedded in its substance the lumbar portion of the lumbosacral plexus.

Inferoventrad of the joint, behind the psoas, the pyriformis muscle arises from the front of the sacrum and the margin of the great sacrosciatic foramen, and lying upon it is the sacral portion of the lumbosacral plexus. All these related structures receive their innervation from the trunks issuing from the lumbar intervertebral foramina and the anterior sacral foramina. Consequently invasion of the bones, cartilages, and joints by inflammatory diseases, of whatever etiology, is quite likely to produce pain impulses traveling through the nerves of the plexus distribution. Supposed sciatica, then, may be in reality an osteoarthritis, either sacroiliac or lumbosacral. Supposed sciatica may mean in reality sacroiliac joint traumatism. Again, remembering the relation of the lumbosacral plexus on the right side to the appendix, ileocecal valve, and beginning of the colon, and on the left side to the omega loop, one readily appreciates the reason for pain in the presence of disease attacking these viscera. The same holds true in pelvic diseases. In short, complaints of pain in the lumbosacral-plexus distribution call for routine examination of the abdomen and the lumbosacral and sacroiliac regions, including rectal and vaginal examinations and sometimes a study

of sensory changes. The question may be asked, Why is the great sciatic more frequently involved than the other branches? That is answered when one recalls that this nerve is formed from the fourth and fifth lumbar and the first, second, and third sacral nerves.

5. Abdominal Pain in Angina Pectoris.

Cases of angina pectoris, frequently fatal, are often erroneously diagnosed acute indigestion. As an illustration of this fact we wish to present in brief the history of a patient recently under the care of one of us:—

A woman, 61 years of age at the time of her death, which occurred suddenly, was a high-blood-pressure patient, showing usually about 220 to 240 mm. systolic pressure and 115 to 135 diastolic. She had been ailing for about two and one-half years at the time of her demise. The onset of her trouble she dated from a condition which was diagnosed acute indigestion. She had an attack, of sudden onset, characterized by substernal pain with a sense of epigastric distention, nausea, and prostration. She had a number of attacks of very acute and often alarming pulmonary edema, some of which followed anginal attacks similar to that described above. The blood-pressure often fell a little, down to 200 systolic, and much lower on two occasions, after her attacks of angina. This fall did not take place until from two to three days after an attack. She frequently referred to attacks of substernal pain, numbness and aching in the left arm and hand, and to a less extent in the right, as well as to pain in the left side of the neck and in the epigastrium. She spoke of having indigestion whether she ate or not. She was a well-nourished woman, of normal physical conformation except for left ventricular hypertrophy (no valvular lesion), arteriosclerosis, and a moderate degree of interstitial nephritis. After one of the more severe anginal attacks, in which the pain occurred in the precordial and substernal regions, and extended down both arms, the left side of the neck, and over the epigastric region, we noted a rather pronounced hyperesthesia over the chest and the involved abdominal area, with hyperalgesia and rigidity chiefly in the midepigastric area, fading off to the left. The hyperesthesia promptly disappeared, *i.e.*, it was not present the following day, but the pain on deep pressure lasted about two days, and the increased muscle tension faded very gradually after several days; while it lasted it was accompanied by soreness when she attempted to turn in bed. Apart from the angina, she stated that she felt distended, and brought up quantities of gas.

Such cases are far more common in men than women, as one would expect, in view of the far greater occurrence of this disease in males, and especially in men of affairs and large business responsibilities. The part such men play in any community makes it incumbent upon us to recognize the gravity of that symptom-complex, so apt to occur after the fiftieth year, which is often regarded as indigestion.

The pectoral and arm pain of angina pectoris is most frequent, but more disseminated or solitary extrapectoral pain is rarely referred to and more rarely recognized and diagnosed. In some instances all the other features of a typical angina are present, as Heberden observed, but in the absence of these the diagnosis is very difficult. Learad was one of the first to call attention to abdominal pain in angina, and he said that it was often regarded as gastralgia. In 10 of Osler's 268 cases the pain was abdominal.

Osler mentions a case in which the attack began with agonizing pain in the left leg. Pain in the jaw, especially in the front teeth, and increased flow of saliva are not at all uncommon, but pain in one testis has also been reported.

There is absolutely no unanimity of opinion as to the manner in which pain is produced in angina pectoris, and an equal lack of definitive evidence exists as to the character of cardiac disease with which angina is associated. Assuming, however, that some form of cardiac abnormality is responsible, we know that the heart is in relation with the first four thoracic segments of the cord through its autonomic fibers, and also with the three cervical ganglia through the superior, middle, and inferior cervical cardiac branches of the sympathetic. As the carotid and cavernous ganglia are merely prolongations of the cervical, it at once becomes manifest that in this way, too, the heart is connected through the sympathetic with the cervical cord segments and the cranial nerves. Thus, it becomes apparent that through the relation between the sympathetic system and the cervical and upper four thoracic cord segments, as well as between the cranial sympathetic nerves and ganglia and the cranial nerves, various sensory, motor, and secretory manifestations are brought about in the head, face, and neck and the substernal, shoulder, and arm regions.

But this does not explain epigastric phenomena, and still less testicular and leg pains. The vagus supplies the heart, and also the stomach, and as it is both efferent and afferent, and its gastric fibers are in relation with the eighth and ninth thoracic segments, and these latter are distributed to the epigastric area, it is conceivable that this constitutes the reflex arc involved. This does not suffice, however, in the case of leg and testicular pain. The twelfth thoracic and the lumbosacral cord preside over these regions.

It has occurred to us, therefore, that the variable cardiac conditions found at necropsy in cases of angina pectoris, the constancy of arterial degeneration, notably of the aorta, and the fact that a rich plexus of autonomic fibers surrounds the aorta throughout its entire length, and that these fibers are in relation with the cord segments at every level, render it probable (1) that the aorta is the pathogenic factor in angina, and (2) that the pain in any region of the body depends upon the part especially involved and its autonomic cerebrospinal association.

Additional detailed anatomic associations might be cited, with illustrative cases, but this would not be permissible in the limits of a paper which aims rather to present thoughts for reflection than a mass of clinical and anatomic data.

NOTE ON THE ADMINISTRATION OF DIGITALIC ACID, THE ACID RESIN OF DIGITALIS PURPUREA.*

By LOUIS KOLIPINSKI, M.D.,

WASHINGTON, D. C.

Several acids have been isolated from foxglove, but they have not been studied in medicine and so far have been merely given a name and briefly described by their discoverers.

Among these bodies is digitalic acid, a fat acid obtained by Kosmann[1] in making his digitalin. It is a white, crystalline substance. It possesses an acid taste, a peculiar rancid odor, and is soluble in water, alcohol, and slightly in ether. It readily decomposes in the air, turning to a brown color. The writer isolated and identified the active principle of digitalis as the acid resin, a constituent essential, but of varying quantity.[2] To give the acid resin its proper name it was necessary to select that of digitalic acid, thereby disregarding the prior claim of Morin to the word. The title of the former investigator designated a chemical compound of uncertain origin and which has until now remained obscure and seems to be devoid of activity. The digitalis effects of digitalic acid are very prompt and precise. They are not marred or destroyed when very large doses are given; neither are toxic effects of acute digitalis poisoning, such as headache, faintness, vomiting, and purging—cumulative action—with sudden and dangerous symptoms of collapse, produced.

Digitalic acid can be given as a pill or tablet of the impure or purified resin. As extracted it is contaminated with the digitalin of Nativelle or digitoxin. The quantity of this contaminating glucosid is but small. The action of the pure resin is identical or perhaps more speedy. The dose of either form is from $\frac{1}{32}$ to $\frac{1}{16}$ grain once each day. As much as $\frac{1}{4}$ grain *per diem* has not produced untoward effects or poisonous disturbance. This largest dose does not result in any more marked digitalis action than the smallest of these quantities.

Digitalate of sodium may be given in the same amount, $\frac{1}{32}$ to $\frac{1}{16}$ grain, once or twice a day. It is useful in a tablet, pill, solution, and, best of all, for hypodermic injection. The digitalate when swallowed begins to influence the cardiac contractions and the circulation within an hour. The effect lasts one, two, or three days.

Hypodermic injections are given once a day. In the gravest cases and in the moribund a second injection is given in twelve hours. The injection is painful to those of normal subcutaneous sensibility, but the smarting is

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* Read at a meeting of the Therapeutic Society of Washington, D. C., February 7, 1914.

[1] M. Homolle: Mémoire sur la Digitale pourprée, Paris, 1845.

[2] A memoir on this subject appeared in the Interstate Medical Journal, December, 1913.

of a few minutes' duration only. In all serious stages of disease the pain passes unperceived. Induration or local inflammation never results. The digitalis action is apparent in the pulse and heart sounds within fifteen to thirty minutes after the injection. As in administration of the acid by the mouth, the larger doses injected do not produce cardiac effects any more powerful than the smaller ones. Digitalic acid, however given, exerts a full digitalis action in twenty-four to forty-eight hours, viz., slows the ventricular contraction and the respiration, increases the general muscle tone and vigor, and increases the urinary secretion. It raises the blood-pressure.

In cardiac therapy it is necessary to use remedies for months and years, and urgent or sporadic administration is essential only in those severe acute conditions in which life is directly menaced. Hence hypodermic injection must be limited entirely to these occurrences; and in all other cases where a heart with a failing or fallen compensation is to be sustained or uplifted, perfect treatment involves the taking of the remedy for many months. This is also the proper plan for the minor states of heart weakness, such as those associated with chronic headache, cephalic neuralgias, chronic urticaria, chronic bronchitis and asthma, congenital small heart and the symptoms arising therefrom, as well as beginning or moderate cardiac dilatation from affections of the heart valves and myocardium.

For prolonged use digitalic acid is the best form in which foxglove can be given. It never produces those disturbing symptoms which make it absolutely necessary to suspend the use of the leaf or to discontinue it altogether. When digitalis begins to act as an irritant poison, with associated headache, vertigo, vomiting, and purging, digitalic acid can be immediately substituted, recession of these symptoms taking place forthwith. It is evident, therefore, that the acid resin does not produce the poisoning peculiar to digitalis or its principal glucosid, whether this poisoning results from an overdose, or, as is occasionally the case, intolerance is immediately evident from any dose. The following cases will illustrate these differences as noted in practice:—

Case 1. Single female, 35 years, short and frail. Weight 90 pounds, never varies. Retroflexion with sacral pain. Has hay fever and hay asthma annually. Lungs healthy; heart valves intact, heart action regular, impulse diffused, probably prone to dilate from the asthma or exercise. A weak heart in a frail body, without special lesion. For years, from exhaustion, worry, excitement, and late hours, she has experienced a throbbing headache on awakening in the morning, often confining her to bed for a day or two. Does not vomit, but cannot take food. The headache is very severe. No defect of eyesight. This headache is not a migraine, but one of exhaustion from a weak or weakened heart. Digitalis produces nausea and vomiting and she refuses to take it again. She is then given the digitalis resin, which receives her earnest approval, and she asks for more. The headache is absent as long as the resin is taken.

Case 2. Single female, 45 years, medium height, weight 165 pounds. Neurotic and emotional, a hard-worked pension agent's clerk. Marked dyspnea on walking; heart dilated, probably after idiopathic hypertrophy; valves intact, normal sounds accentuated. For twenty years a martyr from headaches over eyebrows and vertex. Facial neuralgias, first and second divisions of the fifth. Rest through early retiring at night, and salines, reduced the weight 30 pounds. Digitalis resin practically cured both the headache and the neuralgia.

Case 3. Married female, 5 feet tall, weight 110 pounds, frail and anemic. Tuberculous antecedents. In her only confinement, excessive hemorrhage. Since then for nine years has been semi-invalid from physical weakness. Liable to syncope. Any effort at housework exhausts her. No hysteria. Pulse very weak, heart sounds and impulse faint, valves intact. Area of heart dullness not increased. Probably fatty degeneration from puerperal hemorrhage. No rheumatism or septicemia. Is given 1 grain of digitalis leaf; and as a result of the nausea and increased faintness it produces, absents herself from further treatment for a long time. It is again resumed when she is confined to her bed for several days following the exertions of moving into a new house. She is then given the resin, which she takes without inconvenience. Heart tones and pulse show increased force.

Case 4. Single girl, 18 years, 5 feet 2 inches, weight 154 pounds. Of fatty habitus; pale, puffy skin; swollen lips, acne vulgaris of face, slight enlargement of superficial lymphatics, scrofulous blepharitis. Breathless on exertion, heart sounds normal. Status lymphaticus. One-half grain of digitalis leaf with carbonate of iron, two or three times a day, invariably causes prompt and persistent nausea, occasionally vomiting. She took instead the resin for two months, without any disturbance and with considerable improvement in the lymphatic appearance.

Case 5. A woman of 47, general health good, last menstruated two years before. Of late has been disturbed by rapid, strong, and irregular heart beats, more often at night, combined with a feeling of discomfort in the chest. These abnormal sensations have made her apprehensive of danger to her health, although she is deliberate, resolute, and free from timidity or hysteria. The heart sounds are normal, the size and position of the muscle not changed. The apex impulse is strong. This disorder is apparently one of function due to altered glandular activity accompanying the change of life. She is given a 2-grain capsule of digitalis powder, to be taken after breakfast or lunch. As a result she experienced a very pronounced nausea each afternoon, compelling her to remain in bed for the rest of the day. She persisted, however, in taking a capsule each morning and retiring with severe nausea later on each day. This cycle was repeated five times. As her description of the disturbance was both direct and clear, it was plain that the irritation of the stomach was caused by the digitalis powder. She was therefore given in its stead a tablet of the resin of digitalis, $\frac{1}{33}$ grain, after breakfast each day. The heart irregularity ceased and there was no further return of the nausea.

Case 6. Female, married, 45 years, height 5 feet 2 inches, 4 children, weight 145 pounds. Menopause. Is pale habitually. On walking or exertion, breathing oppressed. Liable to muscular rheumatic pains in limbs from fatigue. Is erotic, pudendal pruritus, masturbation very probable. Heart sounds faint, heart dullness increased to left, apex beat feeble, aortic stenosis. After taking for a few days digitalis leaf, 1 grain twice a day, is seized very suddenly with vertigo, nausea and vomiting, and diarrhea. Confined to bed. Plainly digitalis poisoning. Is given instead the resin, which is begun the same day. Under its effects the dyspnea and muscle pains cease. Attempt to reduce the weight by diet and salines not successful.

Case 7. A little woman of 65, married, sterile, an industrious housewife. Many years of good health. For the past two years, failing compensation; aortic regurgitation with stenosis; hypertrophied ventricles dilated. Second pulmonic sound sharp, very strong, and hard, throbbing arteries. Dyspnea on mounting stairs and edema of lower limbs. Took for a long time with benefit powdered digitalis in a small daily dose. With this the swollen limbs returned to normal size. Breathing again easy. Under its use yellow vision occurred. The digitalis resin was then given instead. This she has taken for seventeen or eighteen months. Prefers the resin to the powder, because it seems to act more surely and quickly and because the yellow vision alarmed her.

Case 8. Female, 70 years, many children, much housework. Incipient senile dementia. Cannot rest, must work; is forgetful, wanders about at night. Has frequent attacks of cardiac asthma at night. Considerable edema of lower limbs of long duration.

Urine free of albumen. Double aortic murmur from atheroma. Pulse very irregular; likewise heart contractions; apex beat varies from strong to feeble. Fibroid myocarditis; no angina pectoris. The patient refuses to submit to any treatment by rest. Is given daily 1½ grains of powdered digitalis, which, producing after a short time nausea and vomiting, and not altering the difficult breathing or swollen limbs, is rejected by her as harmful. The resin of digitalis is then exhibited. The cardiac asthma disappears, the dropsy likewise. The patient holds the remedy in high esteem.

Case 9. Merchant, 40, short, well nourished. For some years tires easily. Mental lassitude, aching rheumatic pains in muscles of limbs, worn out each afternoon, insomnia, appetite moderate, complexion sallow, looks worn. No history of rheumatism or febrile infectious disease. Used tobacco freely. Pulse weak, small, 60-64, no arrhythmia; cardiac dullness not increased; no murmurs; heart sounds very faint. Excluding pericarditis and its sequels, diagnosis: Beginning fibroid myocarditis. One grain of digitalis with iron carbonate twice a day. After three or four days, suddenly nausea, vomiting, and diarrhea. He became so faint and weak that he went to bed forthwith. Patient concurs in the opinion that this sudden attack was due to the medicine. The next day he began a daily dose of the resin, which he continued without an omission for eight months. The lassitude of his incipient myocarditis was arrested.

(*To be concluded in the May issue.*)

Cyclopedia of Current General Literature

Acetonuria, Testing for.—In diabetes acetone begins to appear in the urine particularly when the patient cuts down his carbohydrate food. In the milder forms, where 100 Gm. of starch may be consumed without production of glycosuria, the urine is, of course, free of acetone. But in the medium or severe grades of diabetes, the urine is never either sugar-free or acetone-free at the same time. Care in the selection of the diet, alkaline treatment, and consumption of antiketogenetic substances may limit acetone production somewhat, but, practically, this may be disregarded. Therein lies the importance of the acetone test. In some cases a rigid diet renders the urine sugar-free, but acetone is always present.

Neither Legal's, Chautard's, nor the iodoform test will detect small quantities of acetone when performed with urine without distillation. After distilling, the iodoform test (Lieben's) is very satisfactory, provided the detection is made by examining microscopically for crystals in form of hexagonal plates or small stars rather than by the odor of iodoform. This test, although reliable, is time-consuming, and the author, therefore, prefers Frommer's test, which may be applied to the urine direct. This test is described by Rosenbloom as follows: About 10 c.c. of urine are treated with about 1 Gm. of sodium hydroxide in substance, and, without waiting for it to dissolve, 10 or 12 drops of a 10 per cent. solution of salicylaldehyde in absolute alcohol are added. The mixture is heated to 70° C. In the presence of acetone a marked purple-red color develops at the zone of contact with the alkali. This test can indicate the presence of 0.000001 Gm. acetone in 8 c.c. of water (Frommer).

Unless the urine is diluted so that its specific gravity is reduced to about 1.010, confusing colors occur that render interpretation difficult. When it is properly diluted, however, urine containing only minute or normal quantities of acetone will give after ten or fifteen minutes' standing a straw or faintly pink color. Checked against the iodoform test, the Frommer reaction was found by the author very reliable. William Muhlberg (Medical Record, December 27, 1913).

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Brachial Birth Palsy.—Careful palpation of the region of the fifth, sixth, and seventh transverse processes invariably makes out, in these cases, a characteristic induration, which varies with the severity of the lesion and is always sensitive to pressure. The examiner should approach the sitting child from the rear and palpate both sides of the neck at the same time to compare the normal with the damaged side. This induration seems to be less marked in those cases where the roots have apparently been pulled from the cord.

Most textbooks give an optimistic prognosis in brachial birth palsy. As a matter of fact, in all cases (except where the entire plexus has been ruptured) spontaneous improvement appears after an interval of three to twelve weeks after birth and continues slowly until the child is about two years old. After this time improvement ceases and there appear increasing deformity and interference with function. Complete spontaneous recovery is rare, occurs only in mild cases, is complete usually by the end of three months, and almost never later than six months. In the vast majority of cases there will be a permanent defect. In every case where there is considerable paralysis and where no improvement begins within the first few weeks there is certain to be some degree of permanent injury to the roots.

Surgery holds out the best hope in most instances. Nerve regeneration being most active in young infants, the sooner a divided nerve is sutured end to end, the better the prospect of a satisfactory result. Operation should be undertaken at the earliest feasible moment considering the general condition and the local resistance of the individual child. Under these circumstances the choice of time for operative interference may vary from two weeks to three months. In these operations the chief risk lies in the anesthetic, as the wound goes only through skin and fatty tissues. The shock is negligible.

In all these cases the best primary treatment is to keep the injured extremity at rest for at least two weeks. This might be done with an ordinary triangular sling so arranged as to derive all its support from the sound shoulder and to cause marked elevation of the shoulder on the damaged side. At the end of two weeks the sling may be removed daily and gentle massage given, always with care not to pull the shoulder away from the head and neck, as this would again stretch the damaged nerves. At the end of three weeks decision should be made for or against operative exploration.

In cases where a root or roots have been torn from the cord they must be anastomosed at operation into a neighboring root, with the hope of getting a distribution of power. In all cases, when the nerve sutures are

placed, the head, neck, and shoulder are to be approximated. This position must be maintained without a moment's relaxation for from three to twelve weeks from the time of operation. A steel brace was devised by the author which serves the purpose without undue discomfort to the patient. It is made of a flat steel rod appropriately bent and supplied with supports for the forearm and shoulder. A muslin cap is fitted to the child's head, which prevents the head from protruding upward too far through the brace. The shoulder pad, which overlies the scapula of the damaged extremity, is fastened by a broad adhesive strap which passes from the pad obliquely downward over the child's back. The forearm and arm are bandaged to the brace.

The after-treatment starts with the removal of the brace, and at first should consist of massage and passive motion applied to hand, forearm, and arm. For an interval of four to six months after the operation, manipulation about the base of the neck and shoulder should be very cautious. After time has elapsed for absolutely firm union to occur in the sutured roots, manipulations about the shoulder should be more vigorous. As the evidences of nerve regeneration appear the child must be educated to use the muscles in gymnastic exercises, games, workshop methods, etc.

Surgical repair of the damaged nerve roots causes a degree of improvement which can be attained by no other method. A. S. Taylor (American Journal of the Medical Sciences, December, 1913).

Carcinoma, the Cardiac Sign in.—The cardiac sign in carcinoma is a remarkable diminution of the area of cardiac dullness in the recumbent posture as determined by digital percussion. The dullness begins above about the fourth or fifth costal cartilage, has its right edge about ½ or 1 inch to the left of the midsternal line, and measures across less than 2 inches at the level of the fifth costal cartilage. Often it measures less than 1 inch across, and sometimes there is no cardiac dullness at all. Often the dullness, though narrow in the recumbent posture, is normally or even abnormally broad in the erect.

Certain limitations exist to the significance of the sign. Thus when any cause is present tending, like ordinary emphysema, to reduce the area of cardiac dullness, then a very small dullness naturally conveys no special meaning. On the other hand, when there is a well-known cause of enlargement of heart dullness, such as albuminuria, valvular heart disease, pericarditis, or retraction of lung from phthisis or past pleurisy, then the absence of the sign is equally without significance. Moreover, where the heart is displaced considerably upward the absence of the sign is unreliable. Yet allowing for these limitations, a large number of cases remain in which its help is of value.

Of a total of 111 cancerous cases 97 (87 per cent.) gave the sign, whereas of a total of 107 non-cancerous cases only 18 (16 per cent.) gave it. In 50 cases definitely doubtful as to cancer examined, the cardiac sign proved wrong only in 6 per cent.

It has been suggested that the sign

is no more than a corroboration of marked wasting. This is not true, for in non-cancerous wasting, even when extreme, the sign is rarely found; in carcinomatous wasting, even when marked, it is sometimes absent; in cancerous cases which have not wasted at all it is sometimes present, and the diminution of the dullness in cancer cases is not proportional to the wasting.

When the sign is present in a case of possible carcinoma, the diagnosis of carcinoma should be rejected only after careful consideration. In what must be, if carcinoma at all, a late case of it, the absence of the test strengthens considerably the hope of the absence of carcinoma. Cases are accumulating in which the sign appeared early enough to enable a successful resection to be carried out. W. Gordon (Bristol Medico-Chirurgical Journal, March, 1914).

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Chronic Arthritis, Treatment of.—Injections of phenol-camphor in chronic arthritis must be made only into the joint, never directly into the blood-stream or the spongy portion of the bone. The formula the author now uses is 30 parts of phenol, 10 parts of camphor, and 30 parts of alcohol, and he injects only 0.5 or 0.25 c.c. at one point; 2 c.c. are necessary, however, for streptococcus processes. By using small doses and refraining from applying the method to the smaller joints, there need be no fear of toxic effects from the phenol-camphor. F. Pohl (Zentralblatt für Chirurgie, January 31, 1914).

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Dysmenorrhea, Treatment of.—Atropine found very useful to overcome a tendency to painful menstruation. It probably exerts a relaxing influence when the autonomic nervous system is in a state of hypertonicity. The pronounced spasticity from vagal overstimulation causes pain at menstruation, and atropine wards this off or cures it. In a certain proportion of the cases in which the drug seemed ineffectual, all had one feature in common, viz., an unusually high blood-pressure. The author now tests the blood-pressure as a routine measure before giving the atropine; if it is within normal range, one can count confidently on the desired response to atropine. If it is abnormally high, there is no use in giving atropine; treatment must be directed to reducing the blood-pressure, and the cause sought and removed. This cause is frequently found in the pelvis—a tumor or inflammation in one of the genital organs, or chronic constipation causing local disturbance in circulation. When the cause is removed the blood-pressure becomes normal and the dysmenorrhea either ceases or then becomes amenable to atropine. L. Stolper (Wiener klinische Wochenschrift, January 15, 1914).

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Epilepsy, New Treatment of.—Four patients were treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic, and were benefited considerably. The dose of fluid injected was 3 to 5 c.c., at biweekly or weekly intervals. The direct effect of the procedure was unmistakable, for the reason that prior to this treatment for months and years the patients had received uninterruptedly large doses of bromides and other drugs, with little or no relief. The improvement

after the administration of the cerebrospinal fluid was striking not only with reference to the severity of the individual attacks, but also their frequency. In some of the cases the nature of the attacks changed: Petit mal took the place of grand mal. The mental hebetude following the epileptic seizures became exceedingly slight. While spinal punctures with removal of cerebrospinal fluid have been reported as alone yielding a beneficial effect in epilepsy, this objection is removed by the fact that, while in the author's 3 male patients the spinal canal was punctured, the fourth patient, a girl of 11 years, had no spinal puncture, and the results were just as satisfactory. The greatest amount of improvement was noticed especially if the injected fluid was taken from other patients during recurrent attacks, no matter how slight the latter may have been. Each of the 4 patients had presented the most serious type of essential epilepsy. Alfred Gordon (New York Medical Journal, January 17, 1914).

* * *

Leucocytosis in Mental Disease.—Cases of acute confusional insanity present a fairly well marked blood-picture, viz., a polynucleosis and eosinophilia. Cases of manic-depressive insanity and dementia præcox show variations in the leucocytic formula resembling the preceding, but not so well marked nor so constant. Continuous polynucleosis and eosinophilia point toward recovery, and absence of polynucleosis and hypoeosinophilia points toward chronicity. Recovery may be hastened by stimulation of the leucocytes by terebene (1 c.c. injected subcutaneously in the flank).

The remission stages of general paralysis are characterized by lymphocytosis, and seizures by polynucleosis. Remissions in general paralysis may be prolonged by suitable doses of tuberculin ($\frac{1}{1000}$ to $\frac{1}{5000}$ mg. of tuberculin residue).

Cases of delusional insanity and terminal dementia do not exhibit a leucocytosis.

Epileptics show a polynucleosis in their preparoxysmal condition, and a diminution in the leucocytes in their interparoxysmal state. D. J. Jackson (Journal of Mental Science, January, 1914).

* * *

Lupus Vulgaris, Treatment of.—Gold and potassium cyanide was injected intravenously in 12 cases of lupus vulgaris. The single dose was 0.01 to 0.05 Gm. The results were good. A course of 12 to 14 injections was followed by an interval of two to three weeks, after which another treatment was given. Even in severe cases the therapeutic results were better than are obtained with tuberculin and other measures. F. V. Poor (Deutsche medizinische Wochenschrift, November 20, 1913).

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Metallic Poisons and the Nervous System.—A wide variation exists in individual susceptibility to all metallic poisons. In those susceptible, if the nervous system is attacked, the peripheral nervous system is the most vulnerable, and more especially the extensor supplies. There is with lead poisoning, in all probability, an early lymphocytosis of the cerebrospinal fluid, probably coincident with, or succeeding upon, the basophilic granulation of the red blood-cells. Non-inflammatory degenerations of

any portion of the peripheral system should suggest the metals as a possible cause. In the absence of skin evidences of arsenic and the blue line of lead, the urine and the blood should be examined, and, finally, artificial abscesses may be induced and examined for the metals. A positive Wassermann reaction does not seem to exclude metallic poisoning, especially by lead, in favor of syphilis in primary nerve or tract degenerations. The source of the poison may not be detectable until long after the presence of the metal as a cause has been established.

In the treatment iodides are used because of their effect in increasing the solubility of the metals in the blood, but Gowers cautions against a too free use of iodine, since the influence of the metals upon nerve structures is exerted largely through the blood, and the throwing of a large quantity of metal suddenly into the circulation may aggravate the symptoms. Magnesium sulphate has long been a favorite eliminant. Calcium permanganate (¼ grain t. i. d.) is recorded to be of value by Stephens. The fixation abscess induced by v. Hinze by subcutaneous injections of 1 c.c. of turpentine has resulted in marked improvement; 0.089 per cent. of metallic lead was recovered in 1.528 Gm. of pus from an abscess by v. Hinze. G. A. Moleen (American Journal of the Medical Sciences, December, 1913).

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Oil-ether Anesthesia.—The fact that the only apparatus needed is a small catheter and a funnel into which to pour the mixture is a strong argument in favor of this method. To a practitioner compelled to work alone, the method would be of inestimable benefit. On account of the gradual and equal absorption of the ether from the colon, and also on account of its rapid evaporation from the lungs, it appears to be at least a comparatively safe anesthesia. Mucus and saliva are absent, and the patient's lungs and stomach are spared. An advantage of oil-ether anesthesia is that it may be administered, if necessary, without the slightest exposure of the patient, the tube being introduced between two suitably adjusted sheets. The patient lies on the left side in perfect comfort, in marked contrast to the disagreeable supine position required for inhalation anesthesia. The preparation of the patient should be the same as for ether-vapor anesthesia by rectum. This is most important and is as follows:—

A cathartic of castor oil should be given the night preceding the operation and followed in the morning by warm-water enemas one hour apart until the return is clear. The patient should then be allowed to rest for two to three hours. One hour before the introduction of the mixture, a solution of 5 to 20 grains of chloretone dissolved in 4 drams of ether and mixed with an equal amount of olive oil is given per rectum. Thirty minutes later $\frac{1}{12}$ to ¼ grain of morphine with $\frac{1}{200}$ to $\frac{1}{100}$ grain of atropine is given hypodermically. Twenty minutes after the administration of the hypodermic injection, the oil-ether mixture should be given slowly (at least five minutes) with the patient in the Sims position. The preliminary medication, and the percentage and amount of the mixture (roughly, 1 ounce to every 20

pounds of body weight) vary with the age, size, and general condition of the patient. A 50 to 65 per cent. solution is sufficient for children and weak, anemic adults, while a 75 per cent. solution is usual with normal adults and should never be exceeded.

The patient should be kept perfectly quiet, not being permitted to talk, and about twenty minutes allowed for the anesthetic to take effect before the patient is moved. Eight ounces of the 75 per cent. mixture will last from two and a half to three hours. If the operation is completed before this time, two small rectal tubes are inserted and as much of the mixture drawn off as possible. Cold-water soapsuds are now injected into one tube and drawn off through the other and one rectal tube then withdrawn. Two to 4 ounces of olive oil are now introduced in the rectum, followed by 1 pint to 1 quart of water, and the second tube withdrawn. The patient recovers consciousness fifteen to thirty minutes later.

By this method the ether is obliged to pass through the lungs before reaching the brain. Consequently a loss is sustained unless a small bag for rebreathing is placed over the face. A large sterile paper bag placed over the face and head, and held in place by a rubber band, answers all purposes.

In the author's cases from 200 to 300 c.c. of a mixture of 3 parts of ether to 1 part of oil seemed to be about the right amount.

The resulting anesthesia is ideal—pulse and respiration normal, no mucous râles, and no after-effects, as regards either nausea or diarrhea. In half of the total number of over 200 cases a supplementary inhalation anesthetic was used, the oil-ether anesthesia proving too light. J. T. Gwathmey (New York Medical Journal, January 31, 1914).

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Pneumonia, Vaccine Treatment of.—The keynote of the treatment of pneumonia by vaccines is early administration. It is not a method suited for late, desperate cases. If vaccine is given early the body is stimulated to produce an excess of opsonins and antibodies; the leucocytes are probably already adequate, or the vaccine will help make them so, and the pneumococci can be killed before they reach such numbers that in their destruction amounts of endotoxins are set free that will greatly injure the heart, kidneys, nervous tissues, etc., before they are neutralized or excreted.

The writer has had a number of cases where the vaccine was given within a few hours of the initial chill and, though the diagnosis was beyond question, the whole process was over in forty-eight or seventy-two hours. In such cases a real pneumonia does not have time to develop to the stage of consolidation, for the body is able to kill the invading pneumococci without being forced back to her last line of defense—the production of a pneumonic process in the lung, which, in so many cases, fails of its purpose, the victim being destroyed in the attempt.

The best method of procedure (though all observers do not agree to this) is to administer a polyvalent stock vaccine of the pneumococcus and streptococcus, of each, 30 million, at as early a time as possible. Make sputum smears and cultures, blood-

cultures in early cases, lung puncture in late ones, and proceed to the preparation of an autogenous vaccine. If there is no definite response in twenty-four or forty-eight hours, repeat, or preferably give an autogenous vaccine. If there is no response in thirty-six or forty-eight hours, double the dose. If there is a response, as evidenced by improved clinical symptoms and signs, increased well-being of the patient, etc., defer reinoculation three days, or until the first symptoms of retrogression in the general condition or the physical signs occur. Maintain the dosage or increase it every two or three days until the patient is entirely well. Generally about three doses are necessary.

The results are certainly an improvement on all other methods of treatment. Hundreds of cases have been reported, with an average mortality of 5 to 10 per cent. The mortality from the old routine treatment is still 16 to 20 per cent., and in alcoholic cases nearly 50 per cent. in some epidemics. In 20 consecutive cases seen by the writer in private practice there was but one death. In hospital practice, as a rule, pneumonia is well developed before one sees the cases. In altogether over 100 cases so treated the author observed that the disease runs a shorter course, the patients are less toxic, there is less fever, and generally no delirium occurs except in alcoholic cases. Convalescence also is shortened and the danger of complications is lessened.

One should remember in pneumonia the advice of Wright to give citric acid in severe cases of infection. Twenty to 30 grains may be given every two to three hours. Henry A. Craig (Medical Record, December 27, 1913).

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Pulmonary Tuberculosis, Acromial Breathing in the Diagnosis of.—The author reports further experience in the application of Abrahams' finding that, in apical tuberculosis, auscultation at the acromion process increases and amplifies all the auscultatory signs ordinarily obtained over the apices. In practising this method of examination the hard-rubber bell of the stethoscope is placed over the acromion process of the scapula, where it joins the acromial end of the clavicle. In thin people this joint is not well covered with muscle and it is sometimes hard to place the bell of the stethoscope in such a manner as to exclude all external sounds. This difficulty, however, can be overcome by pinching the skin up so that the bone fills the bell of the stethoscope; the surrounding folds of the skin act as a barrier to foreign sounds. Joint creakings, which are sometimes heard, are easily distinguished from râles. The value of this method is best appreciated if the apices are examined first, next the acromion, and then the difference in the sounds compared.

Among 52 cases, consisting of 28 in the first stage, 14 in the second, and 10 in the third, acromial breathing was found present in all the first-stage cases, in 8 of the second, and in 2 of the third. It would seem that it is a valuable method in the first-stage cases; and since that stage is the most important from a diagnostic point of view, and as the method is so easily acquired, it should be universally em-

ployed. N. Magida (New York Medical Journal, December 27, 1913).

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Skin Diseases, Carbon-dioxide Snow in Treatment of.—In two years' experience the writer has treated with carbon-dioxide snow 179 cases, of which 84 were of lupus erythematosus, 7 rosacea, 55 various kinds of nevi, 14 verrucæ, 8 carcinomata, and 100 various other skin lesions.

Of the 84 cases of lupus erythematosus, 10 were cured outright, 21 almost cured, 10 result unknown, and all the other cases markedly improved. Twelve seconds under fairly firm pressure was the average time of application, though places like the concha auris and the lips were subjected to less. Results with the papular types of rosacea on nose and chin were excellent. The author is careful to warn against anything but minimal pressure—average time six to seven seconds, and maximum ten seconds—and agrees with Morris and Low on the utility of the procedure. The 55 nevi showed variable results, especially the flat vascular types. On the whole, he is inclined to think that nevi do not yield to carbon-dioxide snow so well as to other methods of treatment. He prefers light or radium treatment for the common port-wine stains, and the galvanocautery for the stellate type. Cavernous angioma, on the other hand, yielded excellent cosmetic results (6 cases) in fifteen to twenty sittings. The verrucose types are favorably influenced. Common warts are an absolute indication for carbon dioxide, but those of the juvenile type are often too numerous. Such are best treated with a single X-ray application.

In the treatment of small epitheliomata the author has seen no reason for giving up either radium or X-rays, and in none of his 8 cases did he use carbon dioxide exclusively. In certain precancerous conditions, such as hyperkeratotic infiltrations or pedunculated verrucose tumors, the snow was used with complete success, and senile warts yielded at once to single applications.

In lupus vulgaris the results are not at all encouraging, and it is only in the hypertrophic verrucose types that the author recommends it. A similar lack of permanent results was noted in psoriasis. Haslund (Archiv für Dermatologie und Syphilis, vol. cxviii, No. 1, 1913).

* * *

Stretching the Pylorus. — The author reports 21 cases in which pylorus stretching was practised with good result. The total number of stretchings in these cases was 100. He enumerates the following indications for the procedure:—

1. It can be performed with advantage in all cases of pylorospasm, provided there is no fresh active ulcer in the pylorus or its immediate vicinity. If a fresh ulcer in this region is present, as evidenced by the thread test, a course of treatment should first be undertaken toward the cure of the ulcer. As soon as the thread test becomes negative, careful stretching of the pylorus can be undertaken. If, however, the ulcer shows no tendency to heal, or if there are frequent recurrences indicating exacerbations of the ulcerative processes, an operation is indicated.

2. Beginning benign stenosis of the pylorus forms a large field for the treatment by stretching, with the

same exceptions as already mentioned.

3. Advanced benign strictures of the pylorus, which cannot be operated on account of great underlying danger due to heart lesions, kidney or liver complications, or advanced old age, or when the patient absolutely refuses surgical intervention, can likewise be subjected to the internal stretching. In this group the usual pyloric dilator frequently fails to pass, while the dilating catheter over the thread is still able occasionally to enter the pylorus.

Stretching of the pylorus is not antagonistic to surgical treatment. It works hand in hand with it. Where one procedure fails or is not feasible, the other steps in as its helpmate. Max Einhorn (American Journal of the Medical Sciences, December, 1913).

* * *

Syphilis, Salvarsan and Neosalvarsan in.—Healing is as prompt and certain after neosalvarsan as after salvarsan, whether the disease be primary, secondary, or tertiary. If a given lesion fails to heal under repeated injections of either, it is in all probability non-specific.

The combined method with mercury should be used with either drug in all stages of syphilis. Nearly 20 per cent. more of permanently negative Wassermann and luetin results were obtained in all stages with salvarsan than with neosalvarsan. Five doses of neosalvarsan appear to be required against four of salvarsan to obtain the same end-results.

Twenty per cent. of cases under salvarsan show reactions of some kind, against 8 per cent. under neosalvarsan,—though twice as many of the latter are of the severe toxic type than is the case with the former. There is less thrombosis and less inflammation in the tissues following leakage from neosalvarsan than from salvarsan. Apparently one injection of either the old or the new is insufficient, proving effective only in cases preceded or followed by mercury. The efficiency of both increases with the frequency of repetition of the dose. H. H. Whitehouse and A. S. Clark (Journal of Cutaneous Diseases; Old Dominion Journal of Medicine and Surgery, January, 1914).

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Tonsillar Treatment.—The simplest form of *acute tonsillitis* due to infection or a cold is easily subdued in the following manner: Spray the throat, while the tongue is depressed and the breath held for a moment, with the Dobell-Pynchon antiseptic solution:—

℞ Pulveris sodii boratis (C. P.),
Pulveris sodii bicarbonatis (C. P.),
āā gr. xxx (2 Gm.).
Thymolis, ʒij (8 Gm.).
Glycerini, ʒvj (24 c.c.).
Aquæ, q. s. ad Oj (500 c.c.).
M.

Then apply a 3 per cent. solution of silver nitrate by means of a curved cotton holder. Follow with a spray of a 3 per cent. solution of camphormenthol. The cotton carrier is best made of aluminum, with a rather attenuated point so as to penetrate the crypts. The rest of the carrier should be firm enough to prevent bending as it is pressed into the depressions. In spraying the tonsils, with an atomizer having a curved tip directed toward the crypts, sufficient air pressure

(about 15 pounds) should be employed to drive the spray well into the lacunæ so as to evacuate all retained secretions or concretions. The patient should not be directed to sound the syllable, ah, while the throat is sprayed. The expired column of air would tend to eject the spray from the patient's throat and into the physician's face and over his clothing.

In *rheumatic tonsillitis* the detergent solutions used in simple tonsillitis are also applicable. After these, guaiacol renders excellent service. The pure drug, applied to the tonsil on a cotton carrier, may prove painful; in this event it should be diluted with an equal part of glycerin. Constitutional treatment should be instituted at once with such remedies as sodium salicylate, phenyl salicylate, and antipyrin. The latter remedy is useful in doses of 5 or 10 grains every three or four hours, particularly in relieving pain. The other two, in 10-grain doses, have proven efficacious in preventing the formation of abscesses.

In *ulcerative tonsillitis,* after thoroughly washing the surfaces and crypts of the organ, a 10 per cent. solution of silver nitrate should be applied over the ulcerated surfaces and carried down into the crypts as well. Following this, thymol iodide should be dusted with the powder blower over the gland and thrown into the diseased lacunæ. Ulcerative tonsillitis occasionally follows cauterization of the turbinated bodies. For this reason, the nasal cavities should be examined for diseased foci, and treated if any are found.

Where the tonsils are the seat of recurring inflammation, but the patient objects to operative removal, they can be rendered innocuous by means of the electric cautery employed as follows: Selecting 3 or 4 crypts at a time, a 10 per cent. solution of cocaine is applied to the interior of each by means of a fine-pointed cotton applicator, great pains being taken to prevent any of the solution from escaping to other parts of the throat. After the crypts are sufficiently anesthetized, a curved electrode is introduced into each crypt and a sufficient current turned on to produce a white heat before the electrode is applied. In this manner each crypt is thoroughly cauterized, and the patients so treated have enjoyed freedom from subsequent attacks. S. S. Bishop (Medical Times, February, 1914).

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Tonsillectomy versus Tonsillotomy.—It has not been demonstrated that complete removal of the tonsils is followed by a harmful effect upon the general system. Tonsillotomy involves usually less trauma than does tonsillectomy, but in the latter the method of removal is of primary importance, a sharp dissection down to the tonsillar artery, with snaring of the vessels, giving the least amount of inflammatory reaction. Of the two operations, tonsillectomy shows a larger percentage of septic complications, due both to the greater trauma usually occasioned, and also the relatively larger number of septic conditions in which of late years an operation is undertaken. The relative frequency of postoperative hemorrhage is not definitely established, but, in view of the available methods of treatment, it is no longer a serious complication if dependent upon local causes.

While gross deformities of the parts involved are not likely to follow tonsillotomy, yet cicatricial occlusion of the lacunar orifices is frequent, and may lead to an intensification of the original chronic inflammation. Tonsillectomy in unskilled hands may be followed by marked and injurious distortion, but with good technique it should result in no other alteration than an approximation and occasionally a partial fusion of the pillars.

The indications for operation should be determined by the pathologic changes of the tonsils which are actually a detriment to the individual. Simple hyperplasia, if obstructive or favoring catarrhal conditions, and if persistent, may be sufficiently treated by a tonsillotomy, especially in children. The systemic ill effects of chronic tonsillitis may be increased by a tonsillotomy. Complete removal is here preferable to a partial one, although mild cases of chronic inflammation may be sufficiently relieved by appropriate treatment without excision. Infection of the fauces due to virulent micro-organisms may not be prevented by removal of the tonsils.

Recurrent local infections or general infections having their origin in the tonsils require tonsillectomy as soon as a favorable moment for operating arrives. Tonsillotomy may be expected here to prove inadequate. Recurrent acute catarrhal infections of the throat require complete removal of the tonsils if these show chronic inflammation, although immunity against subsequent attacks is not necessarily secured. Local tuberculosis of the tonsil requires complete removal of the organ.

In young children with adenoid enlargement requiring removal, the tonsils should not be excised unless demonstrably causing injury or favoring attacks of acute middle-ear inflammation.

If an impairment of the speaking voice is dependent upon tonsillar disturbances, these may be corrected according to the principles already given, and if a tonsillectomy is indicated it may with proper technique be performed without anxiety.

In singers slight alteration in the tension of the palatal muscles may influence the voice either favorably or unfavorably. In the case of beginners with harmful alterations of the tonsils a partial or complete removal may usually be done, if the local or general welfare of the patient demands it. With increasing length of singing experience, a correspondingly conservative attitude should be maintained, particularly in respect of truly fine voices. J. L. Goodale (Boston Medical and Surgical Journal, October 2, 1913).

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Urinary Antiseptics.—Hexamethylenetetramine (urotropin) is by far the most efficient of all the urinary antiseptics, but liberates formaldehyde only in acid urine. Helmitol, citramine, hetraline, and cystopurin behave precisely like urotropin.

The acidity of the urine is readily increased to more than double the normal by acid sodium phosphate in the average dosage of gr. xv t. i. d., and to a less extent by benzoates. With large doses of citrates it is easily rendered alkaline, *e.g.*, with sodium citrate, gr. xxx t. i. d.

Sandalwood oil, though not an efficient general urinary antiseptic, seems to have a specific action on the

staphylococcus, which possibly accounts for its reputed favorable action in gonorrhea.

Benzoic and salicylic acids are fairly efficient urinary antiseptics, but of little use in alkaline urine.

Boric acid acts efficiently, its action being unaffected by alkalinity. It is the most efficient drug in alkaline urine available.

Uva ursi is a good antiseptic. Its action is certainly not due chiefly to the arbutin it contains. Anson Jordan (British Medical Journal, September 13, 1913).

* * *

Veronal Poisoning.—Toxic symptoms from veronal may be the result of: (1) A special idiosyncrasy; (2) an excessive dose; (3) repeated small doses, as in the veronal habit. The symptoms after a single large dose are drowsiness, headache, and sometimes ataxia. The patient falls into a deep sleep. In severe cases the sleep deepens into coma, and the patient becomes cyanosed, with rapid and often stertorous breathing. In this stage a marked rise of temperature, even to 103° F. or more, is common, and a physical examination of the lungs will probably show areas of dullness on percussion, increased vocal resonance, bronchial breathing, and moist sounds. These signs will be accompanied or followed by those of a general edema of the lungs, such as moist, bubbling râles all over. It is quite easy for a severe case of veronal poisoning to be mistaken for pneumonia, and the author has known the mistake to be made on several occasions. When deep coma and pulmonary symptoms develop it is uncommon for recovery to occur. Sometimes a condition of coma and high temperature will last for as long as four days before death supervenes, but after a very large dose death may occur in less than twenty-four hours.

It is said that digestive disturbances, nausea, and vomiting occur. They undoubtedly do in chronic veronal poisoning (veronal habit), but in the author's experience they are uncommon where a single large dose is taken. Skin rashes are erythematous and of a rubeoliform or scarlatiniform character. It is stated that occasionally urticarial rashes occur and also extreme pruritus and edema of the face. In the author's experience skin rashes have not been common after veronal. He has not observed urinary disturbances except slight albuminuria. In several severe cases he has noticed a remarkably free excretion of urine, but often the urine has to be withdrawn by the catheter when the patient is in a comatose condition.

In chronic veronal poisoning (veronal habit) the patient often develops an abnormal mental condition; visual hallucinations are common, and delusions may also occur: a sort of double self may exist subjectively. Tremors and marked ataxia are common, and the condition may resemble cerebellar disease. The speech is often thick and indistinct, and visual disturbances may occur. The gait is commonly quite reeling. A complete disorganization of the moral sense is caused.

In cases of renal disease veronal is much more toxic than with normal patients. It is important also that constipation should be avoided if the drug is being given frequently. In these conditions a cumulative action

may occur if it is given in therapeutic doses continuously.

In a healthy adult a dose of about 50 grains would be dangerous, and this might be regarded as an average minimum fatal dose. Much larger doses have been taken without death resulting, but, on the other hand, fatal cases are recorded from doses of 15 grains.

Undoubtedly tolerance to veronal may be established in some cases, but one comparable to that in morphine and cocaine takers does not occur. Even where patients are accustomed to taking the drug a dose of about 50 grains is likely to produce deep coma which may be followed by death.

Treatment.—If the patient is seen soon after the taking of the drug—within four hours—one should pass into the stomach a soft stomach-tube to which is attached a piece of plain rubber tubing about 3 feet long in the end of which is a glass funnel. When the tube is in the stomach, some warm water should be placed in the funnel, and the funnel raised, so that the tube becomes filled with water. Before the funnel is empty it is quickly depressed, and this will start a syphon action, so that the contents of the stomach can be syphoned out. When the stomach has been emptied as completely as possible it should be washed out thoroughly by introducing about 2 pints of warm water and then syphoning this off. This should be repeated three or four times. Before withdrawing the tube, about 1 pint of hot, strong coffee with some milk, and an ounce of castor oil or other suitable aperient, should be introduced and left in the stomach.

Cardiac stimulants should be given, such as strychnine, $\frac{1}{30}$ grain, with digitalin, every four hours. Warm normal saline should be given subcutaneously, and also rectal injections of normal saline, containing 4 per cent. of glucose, to the amount of 15 oz. given every four hours. If there is much cyanosis oxygen should be given, and when the pulse is feeble the oxygen may, with advantage, be passed through a wash-bottle containing absolute alcohol. During the comatose state attention must be paid to the bladder, the urine being drawn off by a catheter if necessary. If urine is not being excreted freely, injections of caffeine may be given every four hours. Other stimulants that may be given if necessary are camphor and pituitary extract hypodermically.

The state of coma may last several days. It will, therefore, be necessary to feed the patient. Warm milk, and milk and coffee, may be given every four hours, either by the stomach-tube or by a nasal tube carefully passed. W. H. Wilcox (Lancet, October 25, 1913).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

In amenorrhea, relative or absolute, ovarian extract considered best remedy by author. *Bandler.* 91

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Angina Pectoris. TREATMENT. Concussion at level of seventh cervical vertebræ, together with hypodermic injection of 1/10 grain (0.006 Gm.) of pilocarpine, to increase vagus tone, gives relief more promptly than does morphine. *Jarvis.* 160

Ankylostomiasis. TREATMENT. Betanaphthol in 30-grain (2 Gm.) doses given the first thing every morning is likely to prove more effectual than eucalyptus or thymol. Starvation of patient during such treatment is unnecessary; in bad cases it may be harmful. *Keith.* 165

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing, exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* 55

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Corneal Ulcer. TREATMENT. Bathing part with 1 per cent. ethyl hydrocupreine solution for one-half minute every hour, six hours first day and twelve on next, found rapidly effectual in a case of ulcus serpens with hypopyon from chronic dacryocystitis. Sac expressed and conjunctiva cleansed with boric acid before each treatment with ethyl hydrocupreine, which was dropped on the ulcer. Practically specific against pneumococcic infections. *Wiener.* 168

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solution. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delirium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* 110

Diabetes Mellitus. TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.*, of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often causing glycosuria to disappear. *Cornwall.* 110

Dysentery, Bacillary. TREATMENT. In acute form: (1) Rest and warm covering; (2) only small amounts of food at a time; (3) calomel at the outset; (4) acid drinks; (5) enemata of saline or soda solution or of methylene blue. In chronic form: (1) Rest; (2) enemata of 1:500 or 1:1000 silver nitrate, 0.25 to 0.5 per cent. tannic acid, 1:500 or 1:1000 thymol, 1 to 2 per cent. resorcinol or creolin, or enemata of gum arabic mixed with bismuth subgallate or iodoform; (3) phenyl salicylate, tannigen, ichthyol, or calomel internally; (4) serum treatment, 10 c.c. in mild cases, 10 c.c. twice at six- to ten- hour interval in medium cases, and 40 to 60 c.c. in severe cases, not exceeding 20 c.c. at a time when serum used daily; (5) appendicostomy or cecostomy with irrigation in severe cases. *Bassler.* Page 111

Dysmenorrhea. TREATMENT. Cocaine applied to tuberculum septi in nose and anterior portion of inferior turbinate on both sides, followed by application of trichloracetic acid over these spots, in 93 cases. Four applications made between periods. Cases with premenstrual headache, nausea, and colic at onset of flow—but without organic pelvic lesions—completely relieved. Of 81 cases sending subsequent reports, 48 had been cured and 14 improved. *Mayer.* 167

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* 11

In mild acute cases paint on lesions an aqueous solution of picric acid several times daily; in more severe cases apply wet dressings of the acid, held by facial mask. Prompt and gratifying results. In subacute and chronic types cure hastened by beginning treatment with two or three days' application of picric acid solution. *Wilcox.* 176

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Epithelioma. TREATMENT. Concentrated sunlight, focused on growth with ordinary magnifying glass, found effectual. Useful where X-rays and radium not available. Invariably successful in obstinate recurrent ulcerative patches on face or nose. Focus sunlight on sore for ten or fifteen minutes at a sitting. If scab present, concentrate rays till burning is felt, then lengthen focus to cover wider area. Induce burning again every few minutes. Treat every day or two till scab easily removed, then apply a little cocaine and after three or four minutes apply rays so as almost to cauterize base of ulcer. Alternate with milder applications for fifteen minutes. Under milder treatments thereafter, at longer intervals, cure usually complete in three to six weeks. *Seelye.* 166

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

In facial erysipelas: Have beside bed bowl of boric acid solution in which ice is placed. Keeping cloths frequently moistened with the solution continuously on face effectually relieves pain and burning. Where leg or arm involved: Wet dressings of boric acid or aluminum acetate. In migratory cases: Ichthyol may be applied or surfaces painted with picric acid solution. *Erdman.* 112

Pyramidon used in 20 cases with uniformly favorable results: Diaphoresis, antipyresis, sedation, fading of eruption, which ceases to spread, and improved general condition. Diuretic beverages also given. Locally, following ointment used: Phenolis, camphoræ pulveris, ana gr. xv (1 Gm.); adipis lanæ hydrosi, petrolati, ana ʒss (15 Gm.). *Satre.* 167

Discomfort and pain more rapidly relieved by picric acid solution than other agents, and edema disappears promptly. *Wilcox.* 176

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ʒiiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* Page 1

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Report of cases improved by administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided among twenty days in each month. *Gaultier.* 90

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1) Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2) grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* 48

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made. *Wolff.* 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomentation applied for five or ten minutes twice, and followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* 50

Hemorrhage, Cerebral. TREATMENT. Venesection used with good results and recommended in cases of apoplexy in full-blooded patients with blood-pressure of 200 mm. or more. Amount of blood let in author's cases, 12 to 48 ounces. Where vein at elbow not easily found in stout persons, there are usually varicose veins in legs which can be opened. *MacFarlane.* 121

Hernia. TREATMENT. Inversion of hernia recommended in patients who take anesthetic poorly and maintain strong expiratory efforts, forcing viscera into sac under pressure. Primary union and cure of hernia in each of author's 7 cases thus dealt with. *Haynes.* 170

Herpes Labialis. TREATMENT. Picric acid solution causes rapid drying of lesion and tends to prevent extension. *Wilcox.* 176

Hodgkin's Disease. TREATMENT. Benzene, 5 minims (0.3 c.c.) three times daily at first, then increased to 10 minims (0.6 c.c.), caused marked regression of enlarged nodes, beginning two weeks after treatment begun, in a case previously treated unsuccessfully with X-rays. The 10-minim dose was continued for six weeks. *Lawson and Thomas.* 173

Hyperchlorhydria. TREATMENT. Cream diet considered useful. (See Ulcer, Gastric.) *Nichols.* 169

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intertrigo. TREATMENT. Paint picric acid solution on surfaces and separate them with thin layers of absorbent cotton. In the more severely infected cases wet dressings of picric acid. Prompt results. *Wilcox.* Page 176

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valuable for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Lumbago. TREATMENT. Salicyl compounds or a 10- or 20- grain (0.6 or 1.2 Gm.) dose of quinine at onset of condition useful. Rochelle salts, ½ to 1 dram (2 to 4 Gm.) every hour or two until urine alkaline and bowels freely moved, also valuable. "Walking the lumbago off" may succeed if free perspiration accompanies the exercise. Turkish bath in early stage safer and more effective. Later: Rest, dry cups locally, deep massage, faradic current, and, if salicylates fail, iodine, in vegetable protein combination. *Henry.* 175

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation, in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Ozena. TREATMENT. Use of sugar recommended. For first week or two surgeon should carry out treatment himself, and precede sugar by removal of crusts from nose, softening them if necessary with hydrogen dioxide or sodium bicarbonate solution. Patient to use nasal syringe once daily. After crust removal, massage mucosa with cotton-tipped probe; then nostrils may be packed with ribbon gauze soaked in simple syrup, to be removed in twelve hours. Repeat this treatment on alternate days. After a fortnight patient can insufflate powdered sugar himself. *Harry.* 175

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.*, daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Poliomyelitis, Acute. DIAGNOSIS. Preparalytic symptom: A peculiar, twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to somewhat less than a minute. Usually affects part or whole of one or more limbs, face, or jaw, but sometimes whole body. Duration of spells short at first. Often accompanied by a cry similar to hydrocephalic, or by brief period of unconsciousness. *Colliver.* 177

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Low nitrogen diet found to have very favorable influence upon psoriasis eruption, especially when extensive. Severe cases improve under such a diet almost to the point of disappearance of the eruption. *Schamberg, Kolmer, Ringer, and Raiziss.* 178

Application of picric acid solution brings immediate and constant relief from itching. *Wilcox.* 176

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal

fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* Page 53

Puerperal Sepsis. TREATMENT. Fixation abscess recommended in this and other severe infectious states, including pneumonia, appendicitis, typhoid fever, etc., whenever condition seems to be taking a turn for the worse. Inject 2 c.c. of pure oil of turpentine under gluteal skin. When abscess forms, evacuate through small incision (do not drain) and apply Bier cups twice daily. Excellent results in 18 cases. *De Lostalot.* 168

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disappeared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* 55

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intramuscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* 91

Ringworm. TREATMENT. Body ringworm more easily controlled by painting on picric acid solution than by usual antiseptic ointment. *Wilcox.* 176

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Syphilis. DIAGNOSIS. Luetin test valuable as diagnostic measure in tertiary and latent stages of syphilis, indicating a state of hypersensitiveness to spirochetal proteins induced by a period of cessation of introduction of these proteins previous to the test. Provocative injection of salvarsan, followed by both Wassermann and luetin tests, suggested to ascertain whether treatment has been curative in a given case. *Foster.* 179

Tracheobronchial Glandular Enlargement. DIAGNOSIS. Percussion of thoracic vertebræ, especially those above level of inferior scapular angles, affords tonal changes of clinical value in this condition; these must always be correlated, however, with mural signs in the individual case. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect vertebral percussion sound less, and oftener produce dullness than hyperresonance. *Da Costa, Jr.* 180

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

TREATMENT. Frequency of gastric atony and dilatation, with resulting digestive symptoms and secondary toxic manifestations (aches and pains in chest and right hypochondrium, morning depression, insomnia, hepatic weight, vertigo, chilliness an hour after meals, fleeting edema, etc.), in pulmonary tuberculosis pointed out. Treatment: (1) Support to stomach and abdomen by Rose belt of plaster or moleskin, followed, upon improvement, by supporting belt to be worn continuously and later in daytime only. (2) No liquids with meals or for two to two and one-half hours after. (3) Lunch to be light. (4) Recumbency, with attempt to sleep for one-half to one hour after each meal. (5) No alcohol or fresh bread. (6) Medicinal treatment: Tr. nucis vomicæ, acidi hydrochlorici dil., āā f℥ss (15 c.c.); glyceriti pepsini, f℥iss (45 c.c.); aq. menthæ pip., q. s. ad f℥iij (90 c.c.). Teaspoonful in ½ glassful of water after meals. If much flatulence, add chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until relieved. (7) Cold shower or sponge baths, with needle bath to abdomen, followed by brisk rub, each morning. (8) Where mucous passages and flatus: Turkish towels, wrung out in hot water, to be applied to abdomen for one-half hour after meals. (9) Thorough mastication of food and abstention from worrying at meals. (10) Fats to be avoided at first. *F. N. Robinson.* 95

Measures to overcome fever described: (1) Where prolonged fever drains on patient's strength, pyramidon is drug to be preferred—5 grains (0.3 Gm.) in cachet at night, or, if necessary, three times a day. In neurotics bromides sometimes efficacious. (2) Rest in recumbency to be insisted on until temperature does not rise above 99° in men or 99.2° in women, when patient may sit in chair for two hours, then recline on couch, in open air if possible. Exercise then gradually increased. (3) Where severe cough, sedative

mixture tends to prevent fever from the exertion and autoinoculation. (4) Where rest and drugs fail, cautious use of tuberculin (T. R. or B. E.), beginning with only $\frac{1}{100000}$ mg., exerts antipyretic action, though often only for short periods. Tuberculin acts best in cases free from fever while at rest, but febrile when exercise taken. *Wethered.* 120

Ulcer, Gastric. DIAGNOSIS. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* 114

TREATMENT. Cream diet used with success in 26 cases. One quart (4 glasses) a day yields 1800 calories. To this may be added 600 c.c. of milk or 6 slices of bread or 5 tablespoonfuls of oatmeal gruel or 3 eggs. Cream causes inhibition of gastric secretion. If not tolerated in full strength, it may be diluted with equal or greater amount of milk. Ice-cream a useful variant. Some marked cases progressed to good recovery in two or three months under cream diet. Method adapted for bed or ambulant treatment. Also useful as prophylactic against recurrence of ulcer. *Nichols.* 169

Ulcers. TREATMENT. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

Urticaria. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Vomiting. TREATMENT. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Vomiting of Pregnancy. TREATMENT. Apomorphine, $\frac{1}{36}$ grain (0.0018 Gm.) in a teaspoonful of water, found effectual in a severe case; likewise in other cases of vomiting or nausea. *Field.* 182

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1 : 1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received $\frac{1}{3}$ c.c. as initial dose and $\frac{2}{3}$ c.c. four days later; others, $\frac{1}{2}$ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a bronchopneumonia as complication, a mixed vaccine should be used. *Davidson.* 118

Silver nitrate in 2 per cent. solution applied to throat in 95 early cases to prevent spread of infection downward from pharynx. Useful results in 84 instances. Mucus secretion prevented and coughing spells due to irritation by secretion minimized. Silver solution applied every day at first; later, and in older children throughout, on alternate days. *Ochsenius.* 182

Wounds. TREATMENT. Stream of air from ordinary electric fan or register found useful in drying and promoting healing in large wounds, obstinate leg ulcers, and discharging eczema. *Heisler.* 182

Book Reviews

A TEXTBOOK OF PHYSIOLOGY for Medical Students and Physicians. By William H. Howell, Ph.D., M.D., Professor of Physiology, Johns Hopkins University, Baltimore. Fifth Edition, Thoroughly Revised. Octavo of 1020 Pages, Fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $4.00, net; Half-morocco, $5.50, net.

Since the appearance of the fourth edition of Professor Howell's textbook, only two years ago, certain important changes in physiologic views have taken place, more especially as regards metabolism and the mechanism of nitrogenous nutrition of the body. Our knowledge of intermediary metabolism has been gradually enlarged through the extensive researches being done in physiologic chemistry. Among the recent work noticed in the text is that of Tashiro on the production of carbon dioxide in nerves, resting or active; that of Cannon and Washburn and of Carlson on hunger sensations, that of Schilling-Torgau on the histologic structure of the red corpuscles, that of Whipple on the effect of phosphorus poisoning on the blood, that of the author himself on blood coagulation, that of Cohn, Kessel, and others on the cardiac contraction wave, that of Meek and Eyster and of Einthoven on electrocardiography, that of Folin and Denis and of Van Slyke on the absorption of amino-acids into the blood during digestion, etc. On page 553 appears the term "palsus irregularis

pepetuus," requiring two corrections. Recent research on epinephrin secretion and the functions of the pituitary is briefly referred to; also the newer views on the production of diabetes. On the whole, the book may be said to afford a most excellent presentation of modern physiology. The worth of Howell's textbook as an introduction to the subject for the student has been fully proved by the popularity of the previous editions, and the new issue will undoubtedly be received with equal favor.

Sex, Its Origin and Determination. By Thomas E. Reed, M.D., Middletown, O. 313 Pages. New York: Rebman Company, 1913.

The contents of this volume are summarized by its author as follows: 1. A general review of the methods of reproduction in the animal kingdom. 2. A review and criticism of foregoing theories of sex determination. 3. A demonstration of the primitive hermaphroditism of all animal organisms and the latent bisexuality of even the highest forms. 4. An inquiry into the nature of twin births and a demonstration of the importance of the study of twin births in its relation to the problem of sex determination. 5. A demonstration of the bisexual rhythm in the germ plasm. 6. A study of the influence of the lunar month and lunar day on the phenomena of menstruation and also of gestation and other normal functions, fluctuations in the course of infectious disease, the progress of labor, and the determination of sex. The author's view can be summed up in the statement that "sex is determined by the time of fertilization." He also holds that "maleness is katabolism, and femaleness anabolism." From the practical standpoint, he claims to have recorded a number of cases in which patients, by following his directions, were able to secure a desired sex in offspring. In many other instances the sex was successfully predicted. On page 279 appears a table, intended to enable the practitioner to calculate the time of labor and name the sex of the child. While detailed accounts of the author's successful prognostications are given, their number is not very large and therefore not very convincing. His conclusions, however, are based on well-ordered and critically examined material, and the book may be said to be, at least, worth reading.

Coprostasis: Its Causes, Prevention, and Treatment. By Sir James Sawyer, M.D., F.R.C.P., F.R.S., Formerly Professor of Pathology, then of Therapeutics, and lastly of Medicine in the Medical School of London University; Consulting Physician to the Queen's Hospital, etc. Pages 74. Birmingham: Cornish Bros., 1912.

This little book comprises some of the chapters of the fifth edition of the author's "Contributions to Practical Medicine," set apart to form a monographic work on coprostasis. The author recognizes that, in view of the complex and numerous conditions with which coprostasis may be associated, routine treatment may prove disastrous, and each case requires careful investigation of the cause before treatment can be instituted with uniform hope of success. In the first chapter the treatment of constipation without drugs is set forth, and the advantages of regularity of effort, proper position of the body in defecation, an erect carriage, exercise, and diet emphasized. The second and third chapters include a summary of the etiology and prevention of habitual constipation, and points in the treatment of more pronounced fecal retention, with remarks on enemata and the use of O'Beirne's tube. Chapter IV deals with intestinal obstruction, Chapter V with what the author terms "lumbago coprostatica," and Chapter VI with the author's methods of treating hemorrhoids, in particular with the use of an ointment or suppository of the common English wild plant, *Ranunculus ficaria* (pilewort or lesser celandine). Many useful hints for practice are presented in this genially written little volume.

The General Field

Conducted by A. G. CRANDALL

A Thankless Profession

It is but reasonable to suppose that the normal young man, in selecting an occupation or profession, should be influenced, to a certain extent at least, by the prospective attitude of his fellows. Surely the approval of one's associates is no small item in a world so small as ours, where the plaudits of the multitude or retributive justice cannot well be escaped.

A strongly developed sense of duty may, however, overrule all other considerations and point the way to a life of inevitable sacrifice with few compensations except an approving conscience. As an example of such an unappreciated sacrifice the weather forecaster probably stands at the head.

In most of life's ventures in which chance must necessarily play its part, luck does not always do us tricks. Even in the stock market, or in buying gold-mining stocks of one's trusted friends, there is an occasional chance of winning. Fairly good five-cent cigars often do not average to cost over fifteen cents each when secured as prizes at the cigar-store slot machine. It is such knowledge that places the weather forecaster in such a sad contrast.

It is an old proverb: "Lucky at cards; unlucky in love." Possibly this holds good in predicting the weather. If so, there are compensations after all.

* * *

An Alluring Idea

A social worker, speaking to the women of a certain church in Philadelphia, informed them that Moses was a walking delegate, leading the children of Israel out of Egypt because they were not paid sufficient wages. He also gave them to understand that the men who did not work had scriptural authority for demanding wages just the same by quoting the parable of the "eleventh hour."

While a good many of the "unemployed" who are now busy stirring up social and political ill feeling find it irksome even to work the eleventh hour, the above-outlined theory of social ethics shows how many ways there are to distort a philanthropic sentiment.

The literature of this rather critical social era frequently refers to the "dignity" of labor, but it is seldom that any writer on this subject of far-reaching importance ever dwells upon the physiologic benefits of systematic labor. This is a subject that should be elucidated so plainly and so clearly that all people who have reached the age of discretion and intelligence may understand how essential systematic occupation is to normal health.

Nothing is more harmful to the cause of social justice than the ventilation of the idea that the world owes every laborer a living, irrespective of the amount of skill and real effort he is willing to deliver.

* * *

The Erect Posture

We learn from eminently successful newspapers that the erect posture is absolutely essential to anything like a normal action of the lungs, heart, stomach, and other rather necessary furnish-

ings of the human anatomy; also that a good many architectural mistakes in said anatomy are plainly visible to any really artistic observer.

We find upon this authority that the human stomach is a wonderful thing which must not be deflected from the crooked and narrow path. It should not be permitted to crowd against the heart by day or take advantage of a sleepy liver by night. All that is necessary to provide each human stomach with a correct perception of ethics is to stand erect.

As we look about us we are encouraged by numerous examples of the stern determination to preserve the erect position regardless of cost. Automatically as the abdomen of obesity projects do the shoulders retract. Thus is the center of gravity preserved and an outlet, or perhaps we should say annex, is provided for surplus development of the digestive machinery.

We believe that much of this anxiety as to posture is needless. Nature provides each individual with a separate code. "One man's meat is another's poison." The well-fed office man, bending over his desk, cramping his lungs in a bad atmosphere, may yet have developed an immunity far surpassing that of the erect open-air giant whose instinct for the balanced ration is defective. To neither overeat nor undereat is to have solved one of the greatest hygienic problems.

* * *

A Theory That Doesn't Work Out

A certain class of enthusiasts are going to do away with the so-called social diseases by the simple process of educating everybody in all the nauseating details of these diseases.

This is a theory that will not stand the test. It has been stated, and is doubtless true, that of all classes of young college men the medical student, who is logically best informed as to the contagion risk of venereal disease, is the most likely to acquire it.

It is natural that young men who have been raised in a slum neighborhood and who have become familiarized with the pathologic consequences of dissolute living should have a knowledge which would protect them to a far greater extent than the young men more happily situated in their early lives who have never come into contact with the visible signs. Yet it is in these districts that such disorders are most prevalent.

Altogether it is a question whether universal information as to the details of venereal disease and the usual modes of acquiring it is not more of a danger than a protection.

Sanitation involves a good many essential, but not especially edifying, details. Just why it should be necessary for everyone to understand all the aforesaid details in order to exercise reasonable sanitary habits has not yet been made clear.

* * *

Steady Progress

A prominent suffragist who came into the limelight by a sensational marriage a few months ago has further evidenced her advanced ideas by agreeing with her husband to throw away the wedding ring, which she says is only a relic of barbarism indicating the enslavement of women.

One of the primary objects of civilized marriage is the birth of children. We have the impression that the second generation, if there is one, will hardly

look back with pride upon this episode in the family history.

This incident would be unworthy of note save for the evidence of the rapid progress usually to be observed among those who cast aside the "trammels."

* * *

Unfortunate Tendencies in the Philippines

The Director of Health of the Philippine Islands, before the upper house of the Legislature, recently argued for three days in opposition to the proposed radical decrease in the appropriation for his department.

Whether he will get a sufficient appropriation or not is very doubtful. The tendency under the present administration of affairs in the Philippines is to relax the vigilance which was considered essential to the proper conduct of affairs under the administrations of Presidents Roosevelt and Taft.

Naturally there is a feeling of great insecurity manifesting itself among American residents on the Islands.

The injection of partisan politics into a matter of such grave importance as the question of sanitation in the Philippines is certainly regrettable.

* * *

A Unique Will

A woman of Philadelphia who died a year or two ago in her will devised to Swarthmore College the sum of $2,000,000 on condition that athletic sports be abolished from that institution. The trustees of the college had most excellent uses to which they could have applied this large endowment, but they considered the price too high and declined to accept the bequest. It will now be devoted to other charitable purposes.

It is difficult to comprehend the mental processes which would lead to the execution of so strange a bequest, but it is fair to presume that they were pathologic rather than normal.

Nothing is so conducive to healthful mental and moral atmosphere in a coeducational school as a well-organized system of athletics. Under such conditions a robust male student can consistently parade his physical prowess while the female of the species looks on and applauds.

There must, as a natural course, be a kink in that line of reasoning which leads to the conclusion that such natural manifestations of youthful virility are objectionable.

* * *

The Milk Question Again

Notwithstanding the assurances of a large number of physicians, the prejudice against pasteurized and sterilized milk will not down.

After a woman has drunk milk in its normal state, or milk diluted with other fluids for a time, as an aid in lactation, she is quite prone to acquire a condition of entire cheerfulness over the prospect of later on being able to dispense with the indulgence of milk in any form, and the idea of forcing semi-cooked milk upon the helpless infant does not appeal to her sense of justice. Therefore, if the child must have milk, she is in favor of its having it in the most palatable form possible. It seems that at last science is coming to her assistance on the principle of the production of immunity by the infinitesimal dose. It is now suggested that the

period during which the child is protected to a considerable measure by the antitoxin contained in the milk is the best possible time to immunize that child against the possible infection of tuberculosis. Thus, according to this line of reasoning, the employment of pasteurized milk, rendering infective germs inert, prevents the development of this process of immunity, so that the child may be less prepared to resist infection in later years.

This is certainly a novel way of settling a question which involves so much perplexity. It is, in fact, about as practicable to provide for a community an abundant supply of absolutely guaranteed milk as it is to provide prospective bridegrooms with authentic certificates of absolute freedom from any form of disease. The city demand for milk is steadily increasing and the supply in the country is relatively decreasing.

* * *

They Live Long

The actuary of the New York Life Insurance Company has been doing some investigating and announces the results as follows: "Be a spinster and live long."

Owing to a general feminine awakening as to the shortcomings of the human male, the longevity of spinsters is likely to become an item of great importance in the life-insurance business. More and more women are "getting wise" to the bombastic egotism of mere man and resolving to let him sew on his own buttons and darn his own socks.

Left to his own devices, the bachelor wends his weary way subsisting upon the commercial culinary products of the restaurant and boarding house. For him no giddy whirl of joy and relaxation at the movies. After a brief time all theatrical comedies look alike to him and he falls back for solace upon his pipe and, alas! sometimes the highball. And the spinster—with what a sense of relief does she return to her apartment after an evening with some married friend and her vociferous offspring.

All this has its influence, and the insurance actuary with his Sherlockian instinct of figures has set the sad fact down in black and white. Woman lives longer unmarried. "Of all sad words of tongue or pen" is likely to be the refrain of the married woman hereafter rather than of the old maid.

And yet it might be appropriate to say that in some instances woman will prefer "a short life and a married one."

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Original Articles and Summaries of Selected Articles

GENITAL FUNCTIONS OF THE DUCTLESS GLANDS IN THE FEMALE.*

BY W. BLAIR BELL, B.S., M.D., M.R.C.S., L.R.C.P.,
LONDON, ENG.

THE internal secretion of the ovary has never been isolated. The only evidence that there is an internal secretion rests upon the results of extirpation and destruction experiments, and to a less degree on clinical observations. The resulting atrophy of the uterus is taken to indicate the loss of some secretion which normally activates this organ. Fränkel showed that destruction of the lutein cells led to abortion in pregnant rabbits. It has been supposed that the corpus luteum provides a secretion which assists in maintaining the position of the imbedded ovum intact. Experiments on animals seem to support this view; but cases in the human subject are on record in which both ovaries have been removed during the first few weeks of pregnancy for such discrete tumors as fibromata without interrupting the course of gestation. Herein lies one of the great difficulties in the subject; different orders of mammals have organs of internal secretion which are structurally and even functionally different, although perhaps in degree only. Individuals in the same species may vary, both in animals and in man. It may be that the secretion of the corpus luteum in women is much less important for the normal implantation of the ovum than it is in rabbits.

The interstitial cells of the ovary, too, are believed to possess a special internal secretion. Limon first compared the ovaries of many species of mammals, and found an enormous difference in the preponderance of interstitial cells in the different ovaries.

* Summary of article in the Lancet, March 22 and April 5, 1913.

Effects of Oöphorectomy on the Genital Functions.—Hick and the author have pointed out that the effect of oöphorectomy on the non-pregnant uterus is to produce atrophy of the muscular coats. Normal muscular contractions are abolished and atrophy supervenes, especially in the circular muscular coat. This has been confirmed and accepted by Marshall and others. The total ovarian secretion, when injected intravenously, causes contractions in the estrous uterus of the rabbit, but inhibits the contractions of the pregnant uterus.

Effects of Oöphorectomy on General Metabolism.—The author removed the ovaries of 6 cats, which were kept for periods ranging from 139 to 251 days. The urine was collected and fully examined at frequent intervals, both before and after operation. The specific gravity of the urine was higher after operation than before in half the cases. The calcium excretion was diminished by one-half. The chlorides were slightly diminished. The phosphorus excretion was much increased, as well as the total nitrogen and urea percentages. The ammonia was slightly increased. The author does not think one can look upon the changes recorded in regard to the nitrogen as of much importance. The increased phosphorus excretion was somewhat curious in view of the definite decrease in the excretion of calcium. The author holds the view that the ovaries take an active part in promoting the excretion of calcium, especially in connection with menstruation. These experiments showed that removal of the ovaries lessens the urinary excretion of calcium by one-half.

Effects of Oöphorectomy on the Thyroid.—The thyroid of the normal non-estrous and non-pregnant female rabbit is not a very active organ in so far as the production of colloid is concerned. But after removal of the ovaries there is great distention of the vesicles, which are filled with colloid. Further, the colloid is basophile in character and stains blue with hematoxylin, whereas the normal thyroid colloid is acidophile and stains with eosin. It can safely be asserted that there is a considerable increase in functional activity of the thyroid of rodents after oöphorectomy.

The normal colloidal secretion of the anterior lobe and pars intermedia of the pituitary is basophile, but under conditions of increased activity it may be eosinophile. Further, like the thyroid, in a condition of greater hypophysial activity no colloid is formed, but the secretion is abstracted directly from the eosinophile cells. In conditions of the greatest activity of all, the secretion is directly abstracted by the blood or lymph from faintly staining basophile cells—so-called chromophobe cells. There is, in fact, a cycle of events to be demonstrated in the hypophysis according to the needs of the moment.

It is probable, then, that the basophile colloid found in the rabbit's thyroid after oöphorectomy represents a storage secretion, which is formed to meet the altered conditions of metabolism. The relatively inactive thyroid which is normally found in rodents (non-pregnant) is probably related to the very marked development of the interstitial cells in the ovaries of these animals. As a consequence, a marked reaction is produced in the thyroid of

rodents by oöphorectomy, and not to the same degree in other mammals, such as the carnivora.

Effects of Oöphorectomy on the Thymus.—Calzolari first showed that castration produced hypertrophy of the thymus. His experiments were carried out on rabbits. No work has been done in regard to women, but eunuchs have been found to possess thymus glands which have not undergone involution. It has also been noted by Marrasini and by Gellin that castration after genital activity has been established gives rise to enlargement of the thymus.

In the author's experiments on cats the thymus was found much larger after oöphorectomy than in the normal adult animal.

Effects of Oöphorectomy on the Pineal Gland.—While Biach and Hulles, giving the results they obtained by castration of male and female kittens a few weeks old, arrived at the conclusion that atrophy of the pineal gland occurs in all cases, other observers have been able to find no changes in this organ.

Effects of Oöphorectomy on the Suprarenals.—In rabbits and cats there appears to be a definite increase in the reticulated portion of the cortex at the expense of the zona fasciculata.

Effects Produced on the Thyroid by Ovarian Insufficiency in Women.—The well-known enlargement of the thyroid in pregnancy probably corresponds with that found after oöphorectomy, for in certain respects the ovary is quiescent during pregnancy. It is known that this enlargement normally does not produce the signs associated with exophthalmic goiter, but is due to excess of colloid material. At the same time the author has known more than one case of Graves's disease commence during pregnancy. It is probable, also, that the enlargement of the thyroid seen in girls during menstruation about puberty is due to the incomplete state of development of the ovaries, and histologically is the same in character as that occurring during pregnancy.

A patient aged 25, referred to the author, had had 1 child eleven months before she came under observation. She was able to nurse the baby for a few weeks only, owing to deficient secretion of milk. She presented herself with typical symptoms of early exophthalmic goiter, and her pulse rate was 150 per minute. She had never menstruated since her confinement, but had always been regular before she became pregnant. She was found to have the somewhat rare condition of superinvolution of the uterus. The length of the uterine cavity was under 2 inches. The left ovary was palpable and apparently not atrophied. The pathology of superinvolution is not completely understood, but the author thinks that there must sometimes be an insufficiency of ovarian secretion, even if it be not possible to recognize histologic changes in the ovary with present methods of investigation. At the same time, insufficiency of other ductless glands may lead to the same condition.

On the whole, it is amply proved that ovarian insufficiency leads to changes in the thyroid, which may either be of the type seen after experi-

mental oöphorectomy—namely, colloid accumulation—or, more rarely, that represented by exophthalmic goiter.

Effects of Oöphorectomy on the Pituitary Body.—Removal of the ovaries appears to exert a certain influence over the secretory functions of the pituitary body. But in the author's experience the change is moderate and not quite constant. Thus in one experiment—cat No. 6 of his ovarian removal series—after an interval of 210 days there was no divergence from the normal to be recognized histologically. In most of the cats, however, definite changes were found as long as 245 days after oöphorectomy. There was a large preponderance of eosinophile cells in the anterior portion. This shows activity, but not the great activity seen after thyroidectomy. In the pars intermedia the cells are fused and there are colloid vesicles and sometimes colloid cysts. This colloid stains with eosin, in contradistinction to the normal condition of basophilia. It is interesting to note that the changes which occur in the pituitary with ovarian insufficiency are not comparable with those found in pregnancy.

Effects Produced on the Pituitary by Ovarian Insufficiency in Women.—There is a peculiar and active state produced in the pars anterior and pars intermedia in pregnancy, but the evidence does not lead one to suppose that this is due to ovarian insufficiency. It is probably concerned with the fetal metabolism, for, unlike thyroid enlargement, it appears to become more pronounced late in pregnancy.

The hemianopia that is sometimes seen during gestation has been attributed to pressure produced by the enlargement of the pars anterior. In the increased secretion of this portion of the pituitary some have sought to find an explanation of the enlargement of the hands and lower part of the face, also sometimes noticed during pregnancy. There is no evidence, however, to show that this enlargement is skeletal. It is usually merely a temporary thickening of the soft tissues, such as may be seen after oöphorectomy.

Effect of Thyroidectomy on the Ovaries and Uterus.—In the normal ovary of the cat the zona pellúcida, the liquor folliculi, the interstitial cells, and the cells of the corpora lutea all stain faintly with eosin. After thyroidectomy all these elements show an increased avidity for eosin. It seems that removal of the thyroid calls for a response from the ovary, just as oöphorectomy does from the thyroid. The nature of the response brings forward evidence that the granulosa cells of the Graafian follicle form an organ of internal secretion. But this secretion is not connected with the integrity of the uterus, for the effect of thyroidectomy on this organ is remarkable. The uterus of the thyroidectomized cat shows a very considerable muscular atrophy, quite as much as occurs after oöphorectomy. The condition may be described as one of superinvolution. But the same effect is obtained in the non-pregnant animal.

Clinical Observations on the Effect of Thyroid Insufficiency on the Genital Functions in Women.—One frequently sees young girls with adiposity suffering from amenorrhea; or one sees the more marked insufficiency which

produces myxedema and is also invariably associated with suppression of the menstrual function. Both the minor and the major state of thyroid insufficiency are readily amenable to thyroid treatment, with one reservation —if the girl has suffered from thyroid insufficiency for some years past the period of puberty, and has never menstruated, then it may be impossible to relieve her genital condition, and the uterus may remain underdeveloped. If, on the other hand, the insufficiency has arisen later, after the subject has possessed full genital activity, then the uterus may, even after a long period of inactivity, resume its normal functions.

Effect of Thyroidectomy on the Suprarenals.—After thyroidectomy, changes that seem to indicate excessive activity of the suprarenals occur in the cortex; and they may be seen normally in pregnancy, and, so far as is known, in ordinary circumstances. The normal appearances differ, however, from those associated with the activity following thyroidectomy. In three of the author's animals an actual calcareous deposit was found in the zona fasciculata after thyroidectomy. He has not seen this condition in a normal suprarenal gland. What occurs is evidently the production of fatty substances in quantities greater than can be immediately dealt with; then calcium soaps are formed, and finally calcareous deposits are produced, just as may occur elsewhere in the body after a similar series of chemical reactions. Evidently, then, thyroidectomy stimulates the suprarenal cortex to excessive secretion, and this no doubt tends to produce calcium retention and prevent excretion.

Effect of Thyroidectomy on the Pituitary.—Herring states that the only change to be noted is an increase in the number of what he calls "hyaline bodies" in the pars nervosa. These so-called "hyaline bodies" are supposed to represent the secretion of the pars intermedia. But there can be no doubt that some—if not all—represent degenerated pars intermedia cells which have migrated into the pars nervosa. This process is not always so marked as one has been led to expect. Also, in contradistinction to Herring, the author found definite changes in the anterior lobe—most marked in animals which were pregnant when thyroidectomy was performed,—viz., an increase in active eosinophile cells at the expense of the large basophiles; both in the pregnant and non-pregnant animal there is, in addition, an increase of large active chromophobe cells, such as occurs normally in pregnancy.

Thus, thyroidectomy causes an increase in the secretory activity of all parts of the pituitary body.

Effects of Removal of the Pituitary (Partial or Complete).—There appears to be no doubt that the ovaries undergo hypoplasic changes after partial removal of the anterior lobe. There is no good description of the histologic appearances, but Cushing states that the follicles disappear, while the interstitial cells persist. The uterus also undergoes atrophy.

It has been noted by Cushing and others that there is a remarkable degree of hyperplasia in the thyroid after partial removal of the anterior lobe. This condition is said to subside eventually, and be superseded by a considerable colloid formation, with apparent disappearance of epithelial activity.

Removal of the pars anterior leads to hypertrophy of the thymus, just as the condition of hypopituitarism is often associated with thymus enlargement.

Removal of the pars anterior, according to Cushing, is also followed by hyperplasia and lipoid vacuolation of the cells of the zona fasciculata in the adrenals.

Effect of Pituitary Insufficiency on the Genital Functions in Women.—It is usual to find amenorrhea both with acromegaly and with the condition which is supposed to represent the opposite, in regard to pituitary secretory activity—the dystrophia adiposogenitalis. With acromegaly the excessive thickening of bones indicates calcium retention—a condition which appears associated with masculinity. The author has seen a patient with acromegaly who developed a deep voice, and had a very considerable hypertrophy of the clitoris. Some might be inclined to attribute this to suprarenal involvement in a polyglandular syndrome. According to Cushing, however, hyperpituitarism (acromegaly) is often associated with low blood-pressure, asthenia, and pigmentation, which indicate suprarenal insufficiency. The author has, in fact, seen a case of acromegaly which presented all the symptoms of Addison's disease.

In view of these facts one must look upon acromegaly as a condition which produces masculinity and consequently amenorrhea.

In cases of dystrophia adiposogenitalis genital atrophy is invariable, yet if the individual has had functional activity before the onset of the disease this activity may return on relief of the condition by decompression or by the administration of pituitary extract. The author has observed this result follow injections of anterior lobe extract in dystrophia adiposogenitalis. Similarly, he has seen good results after the administration of this preparation in cases in which the patient was very obese and suffered from amenorrhea without showing the signs of intracranial pressure, which are usual when the condition has reached the stage of dystrophia adiposogenitalis.

Effects of Thymectomy on the Ovaries and on Calcium-Metabolism.—Paton found that if this operation be performed before puberty there is a rapid development of the genital glands. It appears, therefore, as if the thymus either inhibits the development of the ovaries (Biedl), or that their development follows the withdrawal of the thymus secretion. It is highly probable that the thymus is intimately connected with calcium metabolism.

Effects of Thymectomy on Other Ductless Glands.—No reliable work appears to have been done on these lines. It is urgently needed, in order to clear up many of the difficulties concerning the relation of the thymus to the general metabolism.

Effects of the Removal of the Suprarenals on Calcium Metabolism.—With two rabbits subjected to unilateral adrenectomy, definite results were obtained. One of the animals was destroyed at the end of thirty days, as it was obviously dying. It was much emaciated, its weight having dropped from 2000 to 1400 Gm. The other rabbit died at the end of 127 days.

It also was greatly emaciated, the weight having decreased from 1710 to 1020 Gm. At first the animal gained weight after the operation and then it steadily lost ground. In each case a considerable increase in the excretion of calcium was observed. In one the average quantity excreted after operation was seven times as much as that excreted before operation. In the other it was sixteen times as much.

The excretion of phosphorus was much increased, but not in the proportion one might have expected. The urea excretion was also increased.

The view has been advanced that osteomalacia is due to insufficiency of suprarenal secretion, and Bossi first called attention to the beneficial results to be obtained by the injection of epinephrin in these cases. The author's experiments give strong support to this view of Bossi, not only in the metabolism results, but in a most striking way in regard to the bones of one of these animals. The bones of the forelegs were found to be markedly bent, and the bones of the back legs slightly curved. It was in this animal that the largest quantities of calcium had been excreted.

Effects of Suprarenal Removal upon the Pituitary Body.—The changes that occur seem to be much the same whether the insufficiency be acute or chronic. The cells of the pars anterior show a marked degree of chromophobia with a moderate degree of faint eosinophilia. In many places the nuclei are very deeply stained with hematoxylin. In the pars intermedia the cells are discrete and show no special activity; the nuclei stand out prominently. The pars nervosa is freely invaded by the cells of the pars intermedia, but the nuclei only are prominent, as though they were left stranded after the disappearance of the cell cytoplasm.

One cannot but come to the conclusion that the anterior lobe shows greatly increased activity. The pars intermedia is apparently not in an actively secreting condition, but the extensive invasion of the pars nervosa by pars intermedia cells and the immediate disappearance of the cell cytoplasm appear to indicate that an attempt is being made to counterbalance the loss of epinephrin by the rapid production of infundibulin.

Effect of Removal of the Suprarenals upon the Thyroid.—The author has been unable to trace any histological change either in acute or chronic suprarenal insufficiency.

Effects of Removal of Suprarenals on the Ovaries and Uterus.—There appears to be no histologic change of importance in the ovary. After removal of one suprarenal, if insufficiency be produced, the uterus appears to undergo changes comparable with those that are seen after thyroidectomy, but the muscular atrophy appears less in extent.

Effect of Pathologic Lesions of the Suprarenals on the Genital System in Women.—Amenorrhea appears to be usually associated with Addison's disease, but this may be due solely to the effects of a condition which produces general progressive enfeeblement. On the other hand, experimental evidence indicates that atrophy of the uterus, presumably with insufficiency of the function of the interstitial cells, occurs in these circumstances.

Other pathologic lesions which have been subjected to attention lately

are hyperplasia and tumor formation in the suprarenal cortex. For some years these lesions have been known to be associated with extraordinary changes in the primary and secondary sex characteristics. Glynn found that of 17 cases in children 14 were females. In these there were usually skeletal overgrowth, hair on the face and pubes, and sometimes hypertrophy of the clitoris. Further, Glynn collected 6 cases occurring in young adult females in all of whom there was growth of hair on the face, shrinkage of the breasts, amenorrhea, and sometimes a masculine voice. In a second group of cases there were 13 pseudohermaphrodites, 12 being females, and in these the suprarenal enlargement was bilateral, hyperplastic in nature, and there were no metastases. Glynn suggests that in these cases hyperplasia of the suprarenal cortex occurred in fetal life before the differentiation of the genital ducts, and led to the persistence of the Wolffian derivatives, thus causing female pseudohermaphroditism.

No sex changes are associated with tumors of the suprarenal cortex when they occur in adult males or in women after the menopause.

Correlation of the Internal Secretions in Regard to their Genital Functions.—When the reproductive functions cease and the ovaries atrophy at the menopause the harmony that previously existed between the general and the genital metabolism is temporarily deranged, and various disturbances may ensue. It is only by the careful investigation of each menopausal case that one can arrive at a determination of the manner in which the balance has been upset. It is impossible always to alleviate the symptoms, but the basis of treatment rests on the regulation of the existing disarrangement by the administration of the necessary secretions. Some patients react to thyroid extract, some to pituitary, others, again, to combinations, so great are the individual variations. In most cases a natural readjustment takes place in the course of time.

Strictly speaking, the ovary is only concerned in the temporary function of reproducing the species, and, by its hormones or internal secretions, of bending the metabolism of the body to its purpose. As accessory to these functions the ovary has been supposed to be responsible for the beauty of the vessel by means of which its ends are to be attained. But today one is beginning to wonder how far the ovary does influence secondary sex characteristics, and whether full individual secondary characteristics can be obtained by the influence of the ovary alone. There is evidence that hyperplasia of the suprarenal cortex can upset any influence the female genital gland may be supposed to possess, and can produce in a female some of the secondary characteristics of the male, and even partially change the genitalia to complete the picture. The author has seen a case that possessed every female characteristic except for the absence of uterus, Fallopian tubes, and ovaries; instead, there were testes within the abdominal cavity. This individual was a male pseudohermaphrodite with the pure secondary characteristics of a female, and a prepossessing one at that. Such a condition could not have existed with hyperplasia of the suprarenal cortex; in fact, it is probable there was hypoplasia.

Any influence the ovary has over the general metabolism is, then, related to and dependent on its primary reproductive function. It probably does not influence the metabolism except in so far as this special function is concerned. Of course, removal of the ovaries may produce a temporary disturbance, but this does not invalidate the view mentioned.

On the other hand, the rest of the ductless gland system is related to the genital functions in various ways. Firstly, some of the members—the thyroid, pituitary, and suprarenals—influence the development and subsequently preserve the integrity and activity of the genitalia. Others—the thymus, and possibly the pineal—appear to prevent sexual precocity. Secondly, all the ductless glands control the metabolism in response to the necessities of the genital functions. But, in addition, they adapt the whole organism to the possibility of the situation, and regulate the secondary characteristics, both physical and psychical, to suit the needs of the individual. Once, however, the reproductive organs are removed or undergo atrophy, the primary genital functions of the rest of the ductless glands cease, and the rearrangement of the metabolism that follows produces what are known as the symptoms of the menopause. Contrariwise, insufficiency of the thyroid, pituitary, or suprarenals causes the cessation of the genital functions with atrophy of the uterus. In spite of the reluctance to correlate our knowledge shown by most investigators the matter is not one of very great complexity if the author's views be correct in a general way, although there remains much detail to be filled in.

INJECTION OF QUININE AND UREA HYDROCHLORIDE IN HYPERTHYROIDISM.*

By LEIGH F. WATSON, M.D.,

OKLAHOMA CITY, OKLA.

Cases are reported by the author to show the immediate effects on the symptoms after injecting quinine and urea hydrochloride. The patients had all been on medical treatment for from one to two years without improvement.

Case 1. Mrs. S. K., married. Family trouble for the previous few years. Goiter was first noticed three years before. The enlargement and symptoms gradually increased in spite of medical treatment and rest. The patient was very nervous, and there was tremor of both hands. The pulse ranged from 130 to 160.

Both superior thyroid arteries were ligated and 90 minims of a 1 per cent. quinine and urea hydrochloride solution injected into the body of the right lobe, 60 minims into the left lobe, and the same quantity into the isthmus. The pulse was 160 at the end of the operation, in spite of nerve-block of the neck. It was 150 the next morning, 130 that evening, 112 the second morning after operation, and 104 that

* Summary of article in the Journal of the American Medical Association, January 10, 1914.

evening. The insomnia, nervousness, and tremor disappeared within forty-eight hours. The following week the pulse averaged 100, gradually becoming slower until it reached 80, at which point it remained.

Case 2. Miss H. S., aged 24, single, whose mother has had goiter for years, and whose sister died of hyperthyroidism one month before, complains of nervousness, tachycardia, insomnia, and a severe diarrhea of two years' standing. The patient is losing weight. There has been amenorrhea for sixteen months. The right lobe is 3 inches long and the isthmus somewhat enlarged.

The skin at the site of the injection was infiltrated with a few drops of local anesthetic solution. Through one skin puncture over the center of the left lobe the needle was inserted and 25 minims of a 4 per cent. quinine and urea hydrochloride solution injected at four different points into the body of the left gland. The procedure was repeated for the right lobe and the same amount injected; 30 minims were then injected into the isthmus.

The diarrhea stopped within twenty-four hours. The pulse was 90 after the injection and the general condition was improved. The patient was gaining in weight.

Case 3. Mrs. W. D., aged 33, married, housewife; began teaching school at 16; in a few months noticed increasing nervousness and insomnia, with slight enlargement of the right lobe. Tachycardia becoming steadily worse. Pulse, 120 to 160. Tremor of both hands for eight years. Slight exophthalmos. Constant pain over both ovaries, most marked on the left side; menstruation, with dysmenorrhea, every two or three weeks.

When the first injection was given the right lobe was about the size of a hen's egg, and the left about half as large, with moderate hypertrophy of the isthmus. Forty minims of a 2 per cent. quinine and urea hydrochloride solution were injected into each lobe and the isthmus. Improvement was prompt. On the day following the injection the pulse dropped to 90; for the next two weeks while the patient remained in bed the pulse was from 70 to 80. One month later she was operated on under general anesthesia, with a thorough nerve-block of the operative field; left salpingo-oöphorectomy, right oöphorotomy, and appendicectomy. The cervical canal was flexed and markedly stenosed; dilatation and curettage were done. Throughout the operation the pulse was below 90. The pulse was 80 during the following week.

At the second injection, ten days after the operation, examination showed a small, firm, circumscribed right lobe. The left lobe and the isthmus were also reduced in size. Thirty minims of a 4 per cent. quinine and urea hydrochloride solution were injected into each lobe and the isthmus. Next day the pulse was 80, and normal on the second day, when the patient left the hospital. The patient gained 10 pounds in two weeks.

ACTIVE PRINCIPLES IN THE HYPOPHYSIS.*

By H. FÜHNER, M.D.,

BERLIN, GERMANY.

Some of these principles can be separated from protein-free pituitary extracts by precipitation with the common alkaloidal precipitants, such as phosphotungstic acid. Upon decomposing the precipitate with baryta water, removing the excess of barium salt with sulphuric acid, and evaporating *in vacuo* the resulting solution, there is obtained a faintly yellowish crystalline

* Summary of article in Nouveaux Remèdes, January 24, 1914, from Pharmaceutische Centralblatt, 1912, p. 329.

salt (a sulphate), which dissolves readily in water, but only with difficulty in alcohol, acetone, ethyl acetate, etc. In alkaline solutions this body yields a violet coloration when a dilute solution of cupric sulphate is added (positive biuret reaction).

Further study of the body referred to shows that it is actually a mixture of four different substances, which can be separated by repeated fractional precipitation: 1. A colorless crystalline salt, readily soluble in alkalinized water, but with difficulty soluble in organic solvents. It is levorotatory and carbonizes without melting when heated. It gives a positive biuret test, and with picric acid forms a salt dissolving only with difficulty in water. Pharmacodynamic investigation showed that this substance possesses the typical action of pituitary extracts on the blood-pressure, but is only feebly active as regards the respiration and the uterus.

2. Another colorless crystalline salt, dissolving readily in slightly acidulated water, but with difficulty soluble in organic solvents. It is levorotatory, but less strongly so than the preceding substance. It gives the biuret test and forms a picrate which dissolves easily in water. Placed in contact with alkalies, it immediately breaks down, with liberation of a volatile amine base. It acts strongly both on the blood-pressure, respiration, and uterus.

3. A slightly yellowish sulphate, found only in small amount. It dissolves readily in alcohol and in dilute methyl alcohol having a slightly acid reaction. It dissolves only with difficulty in absolute alcohol, acetone, and ethyl acetate. It is levorotatory, gives a positive biuret test, and forms a soluble picrate. It acts strongly on the blood-pressure and respiration, and produces a more powerful effect on the uterus than any other principle found in the hypophysis.

4. The mother liquor remaining after fractional precipitation of the preceding three substances yields, upon careful evaporation *in vacuo,* a vitreous, brittle, and hydroscopic mass which dissolves readily only in water and methyl alcohol. It gives a positive Pauly test, but not the biuret test. Pharmacodynamically, it exerts a feeble action on the blood-pressure and respiration, but a powerful action on the uterus.

The fluid remaining after precipitation of the original extract with phosphotungstic acid and the removal of this precipitate by filtration yields, upon fractional precipitation, four additional substances, which, while in part crystallizable, do not exert a pronounced action on the respiration, blood-pressure, and uterus.

In view of the fact that the effect of pituitary on the uterus does not depend on a single one of its contained principles, but upon several of them, which differ in power and may produce a mutual reinforcement of action, separate use of the individual principles is not indicated. One of the above-mentioned preparations, however, which can always be obtained chemically pure and of constant composition, is available under the name "hypophysin," and may be prescribed in the form of a sterile aqueous solution containing 1 mg. ($\frac{1}{65}$ grain) of hypophysin in every cubic centimeter (16 minims) of water.

HYPERTHYROIDISM FOLLOWING THE REMOVAL OF MORPHINE IN AN HABITUEE.*

By CURRAN POPE, M.D.,

LOUISVILLE, KY.

A LADY, 34 years of age, married, the mother of 2 normal healthy boys, had lived at home and followed the usual occupation of a housewife and mother. She was of strong build, but had lost considerable flesh and weight. The inception of the habit had come through the medical administration of the drug and she was using from 12 to 15 grains of morphine in 4 or 5 doses daily, by the hypodermic route. Her family history shows a neurotic tendency. The patient had been what she called healthy, although on three occasions she had been more or less nervously exhausted, and at these times complained of cardiac palpitation and anxiety—not enough to constitute a true anxiety neurosis. She complained of no digestive disturbances, was careful in the mastication of her food, and had a good appetite, but was constipated because of the morphine and had occasional bilious attacks. There was no visceroptosis. The skin was clear, but slightly dry. The thyroid was normal in size and rather difficult to discover. Since beginning the use of the drug she had noticed no failure of menstruation, but a considerable diminution in the quantity and duration of the flow. The knee jerks, Achilles and superficial reflexes were increased markedly; the Babinski and Chaddock were negative and there was no clonus or ataxia. The pupils were of pinpoint size and unresponsive (morphine).

The patient was put upon the usual method of elimination and taken off the drug without the use of hyoscine. At the end of six days the morphine had been removed and she was seemingly in good condition. On the morning of the seventh day there was a sudden marked protrusion of the eyes and a very slight von Graefe sign; pupils quickly responsive to light. The thyroid at the same time had enlarged markedly, was hard, tense, and upon auscultation showed a slight bruit. The pulse had risen to 160, and was small and wiry, but weak; there was marked tremor, sweating, and persistent diarrhea,—*i.e.*, a sudden or acute hyperthyroidism. The patient at times was a little flighty, was exceedingly nervous, restless, and irritable. The treatment employed consisted of immediate and free purgation by means of castor oil, the internal administration of strophanthin, and the ice-bag over the thyroid and heart. Several times it looked as if the patient was to be lost, but at the end of three days the attack began to subside. There was a slow but steady recession of the eyes to practically normal, a slower diminution of the thyroid, a drop in the pulse, cessation of the tremor and sweating, and a very slow and gradual recovery from the diarrhea. At the end of the fifth day she was up and by the end of the next two weeks approached closely to her normal state.

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* Summary of article in the Kentucky Medical Journal, December, 1913.

The only explanation of the thyroid attack suggesting itself to the author was that she had a slowly developing Graves's disease the manifestations of which had been kept under by the use of the drug. Yet the very rapid subsidence of the manifestations of exophthalmic goiter and their *subsequent absence* seemed to indicate that one had to deal with an acute hyperthyroidism of obscure origin.

THE PARATHYROIDS.*

By W. G. MacCALLUM, M.D.,

NEW YORK, N. Y.

The most constant and definite feature of tetany is the hyperexcitability of the nerves to electrical and other stimuli. By perfusion experiments it can be shown that the blood of an animal which has lost its parathyroids and developed tetany is so altered that it will produce a specific hyperexcitability in normal nerves which it is made to bathe and nourish. What the change is is still doubtful, but analysis shows that in such blood the proportion of calcium compounds is reduced very greatly. It is known that the abstraction of calcium from a muscle-nerve preparation leaves the nerve hyperexcitable, while the replacement of the calcium brings the excitability back to normal. Too much calcium will still further dull the power of the nerve to respond to stimuli. Injections of calcium into the veins will almost instantly stop the symptoms of tetany, which reappear only when the effect of the calcium has worn off. Probably in such doses as one can calculate, this effect is not due to the mere replacement of the deficient calcium, but also to the dulling effect upon the nerves of the excessive dose. Other evidence of the rôle of calcium in tetany is furnished by the observations of Erdheim, who found that teeth fail to harden and fractured bones to heal firmly in rats deprived of their parathyroids and living in a state of chronic tetany. There is no very good evidence of the presence of a poison in the circulation in tetany.

Parathyroid extract given by mouth in tetany seems to have little effect; injected intravenously, it prolongs life somewhat and decreases the actual convulsions, without lowering the excitability of the nerves to any great degree. No definite relation is found between the parathyroid glands and exophthalmic goiter.

Infantile tetany, tetany of pregnancy and lactation, of various intoxications, and other more obscure conditions, as well as that which results from obstruction and dilatation of the stomach, appear to be caused not by the destruction of the parathyroids, but by some cause external to them which produces these symptoms in spite of the best efforts of the parathyroid glands. In many of these forms—and perhaps particularly in the tetany which is so often associated with rickets and osteomalacia—a disturbance of

* Summary of article in the Post-Graduate, February, 1914.

calcium metabolism leading to the reduction of the soluble calcium in the blood and tissue-fluids seems to be suggested, and it is not impossible that in gastric tetany this same condition is brought about by the great loss of chlorides in the vomited fluid. Therapy in such cases is best attempted through the removal of the cause of the disease and not by supplying parathyroid extract.

When the parathyroid glands are injured or destroyed by operation or otherwise, and symptoms of tetany result, parathyroid extract may be of some temporary use. Calcium is far more effective in overcoming the symptoms in such an emergency and will tide over a dangerous period, but transplantation of parathyroid tissue, though difficult and often unsuccessful, offers the only hope of permanent relief.

DEMONSTRATION OF VARIATIONS IN THYROID COLLOID.*

By A. P. JONES, M.D.,
MADISON, WIS.

Bunting and Brown, in the thyroids of rabbits, following bile intoxication, had in some instances found the colloid of the thyroid extensively vacuolated and pale staining.

With the idea in mind that an outpouring of thyroid secretion following intoxication was the most probable explanation, the author sought a staining method which would differentiate the presence or absence of the thyroiodin in the thyroid colloid. It was found that, following fixation by Zenker's fluid or bichloride, the colloid showed, with variations of conditions, a variable affinity for the different elements of Mallory's connective-tissue stain.

A slight modification of the method described by Mallory and Wright was found to give best results. This consists in omitting the acid fuchsin and staining only with the mixture of orange G and aniline blue.

From the experiments it can be stated definitely that the colloid which contains iodothyrin stains with aniline blue, while that which does not stains with orange G. Both staining reactions can often be seen in the colloid of the same alveolus. This staining reaction apparently depends on the fact that orange G has a greater affinity for the colloid than has the aniline blue, but is decolorized by iodine or the mercuric salts of iodine, while aniline blue is not affected by iodine and therefore stains the iodine-containing colloid. This can be demonstrated *in vitro*. It must be borne in mind that the stain indicates only the thyroiodin of the colloid and gives no evidence of that in the thyroid tissue.

In every instance the total area of blue-staining colloid was greatly increased after the feeding of iodine. In one experiment the control portion showed not only a great predominance of orange-staining colloid, but also

* Summary of article in the Journal of Experimental Medicine, May, 1913.

a histologic picture indicating a state of activity, while the portion removed after iodine feeding showed, besides the change of the colloid to blue staining, a histologic change to the resting, or colloid-goiter, stage. This change to the resting stage following iodine feeding has been repeatedly observed by Marine.

It was observed that any shock to the rabbit, such as prolonged anesthetization, severe operation, or convulsions, caused a diminution of the blue-staining colloid and a corresponding increase in the orange-staining area. This was interpreted to mean an outpouring of thyroid secretion. Arguing backward from the symptoms of exophthalmic goiter, where hyperactivity of the thyroid is followed or accompanied by tachycardia and muscular tremor, an attempt was made to determine the effect of tachycardia and excessive muscular action on the thyroid. For the production of tachycardia, rabbits were anesthetized, a control portion of thyroid was removed, and both vagi were cut as low down in the neck as possible, so as to avoid the nerve supply of the gland. The animals lived from twenty-four to forty-eight hours after operation, dying finally from lung involvement. The results were constant and striking, and showed that greatly increased activity of the heart is accompanied by an outpouring of iodothyrin from the thyroid colloid. Experiments with excessive muscular activity, as so far carried out, give similar evidence. In a dog that had been four hours under ether anesthesia, the thyroid showed large vesicles filled with colloid, which was almost entirely orange staining, and the chemical analysis showed an extremely low iodine content.

These experiments seem to show a relation between the outpouring of iodothyrin from the thyroid colloid and the increased muscular action, and, further, that the colloid of the follicles serves as a matrix or menstruum for the storing of the iodine-containing principle of the gland in much the same way as the hemoglobin is held by the stroma of the erythrocyte. The complete outpouring of the colloid of the alveoli, often observed in experimental work on the rabbit, but due to factors not yet ascertained, might indicate that in the colloid itself are further important secretions of the thyroid cells, or else that the colloid is the means of rendering available to the organism the last vestige of iodothyrin held in the acini.

Abstracts from Current Literature on the Internal Secretions

Tests for Epinephrin.—In testing for epinephrin, two sorts of reactions, the biologic and the chemical, have been employed. The first biologic procedure was that of Ehrmann, who showed the mydriatic action of solutions of epinephrin on the enucleated frog's eye. It was soon shown that this reaction was not specific, being likewise given by

pyrocatechin, and also that it was neither sensitive nor reliable. Fränkel's reaction, based on contraction of the rabbit's uterus; Carraro's reaction (action on the heart of daphnia), that of Meltzer and Auer (action on the ocular conjunctiva), that of Kahn (action on the intraocular tension), that of Loewi (action on the pupil), and a number of others have all proven insufficient or non-specific.

The chemical reactions proposed are at least as numerous. Vulpian was the first to call attention to the emerald-green color produced upon contact with ferric chloride. This reaction is not very sensitive, detecting only 1 : 10,000 epinephrin, and is, therefore, useless for detecting epinephrin in organs or in the blood. The other procedures are almost all likewise based on color reactions, obtained, *e.g.,* with calcium permanganate (Zanfrognini), corrosive sublimate (Commesatti), potassium dichromate (Kohn), osmic acid (Mulon), iodine (Abelous), sodium bisulphate (Pancrazio), potassium bisulphate (Ewins), etc. In general, these reactions are more or less sensitive and sufficient to show the presence of epinephrin in artificial solutions, but very imperfect as regards its detection in organic products, the blood in particular. Thus, Facchini and Tomassi, studying these methods, experimented with the best four of them on 20 human sera, obtained, respectively, from 15 individuals with vascular hypertension and 5 with hypotension. All these sera gave a positive result with Ehrmann's frog-eye method; in none, however, could the presence of epinephrin be detected by the chemical methods above mentioned.

The author, in actual tests, found that the reactions with iodine, corrosive sublimate, sodium bisulphate, and potassium bisulphate gave results distinctly superior to those of the other chemical tests. Each reaction, however, proved disadvantageous in some way, and the author sought to obtain better results by combining them. The procedure advised is as follows: Down along the side of a tube containing the epinephrin solution allow to run a small amount of iodine tincture. A pink ring will at once form where the fluids come into contact; this color will gradually spread throughout the subjacent fluid. In the case of very dilute solutions the color disappears very rapidly. There are then added a few cubic centimeters of a 1 : 1000 aqueous solution of sodium or potassium bisulphate. A distinct red coloration reappears, sometimes purplish and persistent. This reaction, by reason of the rapidity of the response and the duration of the resulting color, appears to be superior to the other methods. Its sensitiveness attains 1 : 2,000,000. The color is still plainly present after several days have elapsed. Emilia Moreschi (Gazzetta medica italiana, January 30 and February 6, 1913; Presse médicale, July 2, 1913).

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Lipoid Substances of the Human Hypophysis and their Relation to its Secretion.—In the cells of the pituitary there are present, together with a protein substance, isotropic lipoid droplets, which increase in size

and number with the age of the individual. The anisotropic substance met with in the cells of some of the hypophyses studied consists of cholesterin esters, probably of oleic acid. As is nearly always the case, these substances are not pure, but are accompanied by other lipoid bodies —fatty acids and soaps. The cell lipoids of the hypophysis are not secretory products, but are to be looked upon as the expression of declining cellular function. The lipoid droplets found in the connective tissue of the pituitary exhibit the same reactions as the isotropic cell lipoids, and may be looked upon as nutritive material. The diffuse, finely granular fatty change of the interstitial tissue of the hypophysis can be considered a manifestation of aging and is presumably dependent chiefly upon glycerin esters. The lipoid droplets seen in the leucocytes are fatty acids; they have nothing to do with elimination of the cell lipoids, but constitute a common finding in normal leucocytes.

All the cells of the hypophysis except the "chief cells," which become active only during pregnancy, produce a colorless secretion which cannot be conceived of as a thinned colloid material, and is destined to travel to the brain along a pathway extending through the posterior lobe and the infundibulum. A portion of this secretion reaches the circulation and is thus thrown off from the organ in the forms of colorless droplets. Meanwhile, however, the secretion supplied from the eosinophile pituitary cells becomes intimately blended with isotropic lipoid substances, thereby becoming sudanophile and no longer mixing with other secretion droplets that have remained colorless.

The colloid of the anterior lobe is to be looked upon as a product of degeneration of the pituitary cells and is eliminated by passage into the circulation; at times cell lipoids also reach the blood along with the colloid.

The neutral fat constantly present in the parahypophysial connective tissue contains fatty acid crystals, which dissolve upon prolonged immersion in formalin. E. J. Kraus (Ziegler's Beiträge; Zentralblatt für experimentellen Medizin, July 10, 1913).

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Cases of Myxedema Following Acute Infections in Childhood.— Report of 2 cases in one of which myxedema followed measles, and in the other acute rheumatism. In the first case the myxedema progressed very slowly, the patient not entering the hospital until the age of 36, though physical abnormalities had been first noted at 12 (two years after the measles). Intellection and the genital functions remained for many years uninfluenced by the condition. Thyroid treatment yielded undoubted results, *e.g.*, removing edema and improving the condition of the hair, but these results were not permanent, the patient dying in the hospital in a cachectic state at the age of 50 years. At the autopsy there was noted, in addition to complete absence of the thyroid and some sclerosis of the pituitary, one histologically normal parathyroid gland. Roussy and Clunet had already demonstrated the integrity of the para-

thyroids in congenital myxedema, but only 1 case showing parathyroid preservation in adult myxedema had been reported, that of Forsyth, concerning a man 58 years of age who had had scarlet fever and measles in childhood and who developed myxedema only at 54. In Forsyth's case the parathyroid tissue was found to contain much colloid and to show a tendency to a thyroid-like vesicular arrangement, suggesting that the parathyroid had undergone change in an attempt to make up for the lacking thyroid function. In the author's case, however, there was but very slight hyperplasia of the parathyroid.

In the second case the signs of myxedema were less typical than in the first, but nevertheless left no doubt as to the diagnosis. The patient had had rheumatic fever at the age of 8 years, and was brought to the hospital seven years later for deformity and ankylosis of the extremities, due to a chronic progressive joint process. The myxedema was probably due to a rheumatic thyroiditis. Whether the chronic deforming rheumatism was the direct sequel of the acute rheumatism or was, like the myxedema, a consequence of the thyroiditis could not be decided, as thyroid treatment did not yield very striking results. C. Achard and F. Saint-Girons (Bulletins et mémoires de la Société médicale des Hôpitaux de Paris, October 16, 1913).

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Leucocyte Extracts in Infectious Diseases.—Results of treatment of infections in animals with leucocyte extracts described. Infections or poisonings were usually brought about by intravenous inoculations, and, as a rule, the extract was injected subcutaneously, although at times intraperitoneally. Animals receiving subcutaneous injections of rapidly fatal doses of *Staphylococcus pyogenes aureus* can generally be saved by treatment with the extract of normal leucocytes of rabbits, even in small doses, especially when these are given intraperitoneally. When intravenous injections of staphylococcus are practised, the results are different, but treated animals usually survive the controls many days and present modified histologic pictures. In streptococcus infections there was a marked lengthening of life and even a survival of the treated animals. Pneumococcus infections, surely fatal in untreated rabbits, become significantly modified in treated animals, even if the treatment be delayed many hours. Leucocyte extracts have a remarkably beneficial action on the course of typhoid infections. Experiments with meningococcus infection also pointed strongly to the value of leucocyte extract.

Speaking most strongly for an explanation of the action of leucocyte extracts as either poison-neutralizing or poison-prohibiting, rather than primarily bactericidal or bacteriolytic, are the effects on temperature, which in fever tends to be lowered, and, when falling below normal from the intensity of the poisoning, tends to rise on treatment, and likewise the effect of the extract in preventing diarrhea. Hiss (Journal of Medical Research, July, 1913).

Thyrosis and Tuberculosis.—Under the term "thyrosis" the author groups the various forms of intoxication dependent upon the thyroid, evidenced classic or incomplete ("fruste") Basedow's disease, thyroid enlargement, inability of the patient to gain weight in spite of overfeeding, and Kocher's blood-cell formula, with lymphocytosis and mononucleosis. Of 45 cases of marked thyrosis, including 6 of typical exophthalmic goiter, but 1—a case of grave exophthalmic goiter without rise of temperature—did not present some signs of tuberculosis. The remaining 44 showed a subfebrile or febrile temperature, all reacted more or less intensely to injections of tuberculin or yielded a positive intracutaneous test, and about one-half of their number presented signs of pulmonary tuberculosis. From his personal experience the author believes that tuberculosis plays an essential etiologic rôle in the causation of thyroses, including exophthalmic goiter. In most instances in which this is the case the associated tuberculosis is in an early phase and mild in form, active forms of tuberculosis being but rarely accompanied by thyrotoxic symptoms. In the absence of other complications thermic elevations witnessed in the course of a thyrosis must nearly always be ascribed to a concomitant or causal tuberculosis. The author agrees with Möbius that pure Basedow's disease is not accompanied by fever. From the therapeutic standpoint, severe cases of exophthalmic goiter require surgical treatment in spite of a complicating tuberculosis. L. Saathoff (Münchener medizinische Wochenschrift, February 4, 1913; Semaine médicale, July 23, 1913).

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Polyurias of Hypophyseal Origin.—The infundibular lobe of the pituitary contains, in addition to a substance capable of glycogenolysis, a chemical body or hormone capable of eliciting diuresis. Under certain operative conditions which entail posterior lobe manipulations there often occurs a diuretic response, and occasionally an extreme polyuria, whereas a temporary diminution in the excreted urine is apt to follow other operative procedures requiring an equally long anesthetization. Posterior lobe implants may cause a temporary polyuria, which subsides on the removal of the implanted tissue. Stimulation of the autonomic system of nerves to the organ elicits diuresis. Certain operative procedures, such as separation of the infundibular stalk, and occasionally a simple posterior lobe excision, may call forth a somewhat prolonged polyuria. Clinical observations, coupled with experimental data, suggest not only that the emotional polyurias are in all likelihood the expression of a neurogenic discharge of hypophyseal secretion, but also that the clinical polyurias of longer duration are in many instances merely the symptomatic expression of an internal secretory disturbance brought about by injury or disease involving the hypophyseal neighborhood. Whether or not there actually proves to be a form of polyuria of primary renal origin, present conceptions of so-called diabetes insipidus need to be recast. Harvey Cushing (Boston Medical and Surgical Journal, June 19, 1913).

Resistance of the Testicles to Experimental Adenocarcinoma Inoculation.—In experiments with the Flexner-Jobling adenocarcinoma of the white rat the author noticed that, while the tumor grows when inoculated subcutaneously or into any other organ in a large percentage of animals used, it does not grow when inoculated into a normal testicle. When a testicle, however, is treated before inoculation either with an emulsion of scharlach R in oil or an emulsion of ether in water, there takes place inflammation with proliferation of the intertubular connective tissue, and, after this, inoculation of the same tumor into the organ is successful. The failure of the growth of the tumor in the normal testicle is not due to a general condition of the organism, but to a local action of the testicle on the tumor cells. The percentage of animals which are generally resistent to a subcutaneous inoculation is very small, and all the animals used for inoculation into the testicle could not have been resistant to the tumor. Nor is the resistance due to the tunica interfering with the expansion of the organ by the growing tumor, nor, again, to the lack of specific food in the organism of the host. Investigations have shown that other inoculable tumors grow well in the testicle. The local resistance can be due only to an inhibitory action of the cells of the testicular tubules on the tumor cells. I. Levin (Medical Record, November 29, 1913).

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Use of Wire Clamp in Operations for Goiter.—The use of a wire clamp in these operations, the author finds, has a number of advantages: 1. It may be adjusted to almost any goiter by bending the wires, although such bending is seldom necessary. 2. Control of hemorrhage is nearly always perfect, so that the gland may be sliced off beyond the clamp with absolute confidence. 3. The tissues are not crushed, but simply constricted as with the use of a tourniquet—which is of importance in exophthalmic goiter at least. 4. There is no danger to the recurrent laryngeal nerves or to the parathyroids; even if they should be caught in the grasp of the wires, which is unlikely, the compression would not be great enough to do permanent injury. 5. There is no chance of the wires slipping from the stump after the gland is resected, because they are held in place by hoops passing through the base of the lobe. 6. The wires are much narrower than the blades of a pair of forceps and hence take up less room. The author has used this method in 20 goiters of various kinds in which it seemed to be indicated. The operations proceeded easily and without anxiety, and there were no fatalities. Leonard Freeman (Proceedings of the Western Surgical Association; Medical Fortnightly, February 10, 1914).

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Thymus Death in the Newborn.—Case of a child who died in a paroxysm of dyspnea twenty-four hours after birth, exhibiting nothing abnormal in the neck and thoracic regions. The post-mortem examination showed a thymus greatly enlarged in both lobes. Recent studies of the relationship existing between the placenta and the thyroid suggest

that the large thymus in the newborn must share in various disturbed conditions of maternal and fetal metabolism.

A possible reason for its sudden enlargement after birth may be found in the measures sometimes taken to establish respiration in the newborn. The most simple and universally employed method consists in folding and unfolding the body of the child in such a manner as to encourage the circulation through the lungs and thorax. A delicate lymphatic organ like the thymus, composed of lymph-follicles and with a very rich blood-supply, might easily become surcharged with blood during this manipulation, and its sudden engorgement through mechanical pressure might bring about death. These suggestions are based (1) upon analogy between altered conditions of other ductless glands in the fetal body and sudden death, and (2) on reported results of treatment directed toward the relief of mechanical pressure. David (American Journal of Obstetrics, May, 1913).

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Hypophysis Therapy in Diabetes Insipidus.—The author reports the case of a girl aged 23 suffering from marked diabetes insipidus. At 18 years she had had a miscarriage, and at 22 tuberculous pleurisy. A positive Wassermann reaction was obtained. Five months before she had suffered from amenorrhea, and developed polyuria and polydipsia. There was no hypertrophy of the thyroid. The arterial pressure was 110 to 112 mm. The daily amount of urine was 5 to 6 liters; specific gravity 1000; no albumin, no sugar. There were no signs of hysteria. The skin acted poorly. There was some evidence of syphilitic retinitis, but no optic neuritis. Opium, valerian, iron cacodylate, mercury, and potassium iodide were each tried without effect. She was then given injections of 0.2 Gm. of pituitrin in 1 c.c. of water and 0.1 Gm. of hypophyseal extract. Immediate success followed this treatment, as seen in diminished polyuria and polydipsia. Whether the product acted directly by replacing an abnormal secretion of the hypophysis, or acted partly on the ovaries or on the system at large, the author does not venture to decide, but there was no doubt as to the directly beneficial effect of the extract. Unfortunately the effect was not lasting, and soon disappeared when the drug was discontinued. No ill effects were witnessed. Farini (British Medical Journal, November 29, 1913).

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Thyroid Tissue in Tumors of the Ovary.—In certain ovarian tumors there occur areas of tissue which cannot be distinguished histologically from the thyroid gland. Between tumors which show a complex teratomatous structure, containing among numerous other elements a small amount of thyroid tissue, and those composed solely of this, there is no sharp dividing line. All these tumors are of similar genesis; they are teratomata, with varying degrees of suppression of the ectodermic and mesodermic elements.

The large majority of these tumors are clinically benign; the few which are malignant show, in most instances, areas of unmistakable irregularity in their cellular structure, or give other histologic evidence of having assumed a destructive type of growth. The thyroid tissue in the ovary is of no functional significance, at least in the vast majority of cases, and these growths give rise to no symptoms other than those which would be produced by any type of ovarian tumor of equal size. The term "teratoma thyroidiale ovarii" is suggested as the most satisfactory designation for those tumors in which the thyroid tissue forms the dominant feature. G. W. Outerbridge (American Journal of Obstetrics, December, 1913).

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Diarrhea of Thyroid Origin.—A thyroid origin should be suspected in all cases of obstinate "nervous" diarrhea, even without any other indications of thyroid disturbance. A woman of 43 had severe diarrhea in the morning for six months, marked debility resulting. Except for some enlargement of the thyroid since the age of 16, she had always been healthy. The author, suspecting thyroid intoxication, obtained a positive response to the Loewi test (mydriasis on instillation of epinephrin in the eye). The blood showed also a lymphocytosis. On these findings alone he did a thyroidectomy, and at once the diarrhea was cured and the patient promptly recovered. Attention is called to a dissociated reaction of the pupils, the exact reverse of the Argyll-Robertson sign, which the author has never met with except in exophthalmic goiter. The epinephrin mydriasis, with other symptoms, points to insufficient functioning of the pancreas as a factor superposed on the excessive thyroid functioning. The connection between these glands suggests that pancreatic extract might be given a trial in cases of diarrhea of thyroid origin, and might render resection of the thyroid unnecessary. H. Curschmann (Archiv für Verdauungskrankheiten, February, 1914).

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Epinephrin in Osteomalacia.—In a case of osteomalacia the author obtained excellent results from the use of epinephrin, injected in doses of 0.5 c.c. daily, in two series of 9 injections each. After the fifth injection the patient could turn around in bed and sit up; after the ninth injection she was able to walk and there was much less tenderness over the bones. Slight after-effects, in the form of cardiac palpitation, headache, and tremor, were present. The patient was finally discharged as cured and subsequent examinations showed no return of the symptoms, despite the fact that she had been ill for sixteen years. In other cases it may be necessary to give more epinephrin; thus, some authors have given as many as 150 injections of 0.5 to 1 c.c. As a rule, larger amounts are better tolerated in the acuter stages of the disease. According to the author, the use of epinephrin seems to be the most effective treatment of osteomalacia now available and is to be preferred to the use of the Röntgen rays. H. v. Salis (Münchener medizinische Wochenschrift, November 18, 1913).

Relation of the Rate of Absorption of Epinephrin to its Glycosuric and Diuretic Effects.—Subcutaneous injections of epinephrin are, in contrast with its behavior in the production of its other effects, more favorable to the production of glycosuria (in rabbits) than intramuscular injections; the failures are fewer and the quantities of dextrose in the urine usually larger. In general, as regards the stimulation of diuresis by epinephrin, a subcutaneous injection exerts usually a greater effect than an intramuscular one. Subcutaneous injections of a certain dose of epinephrin distributed over several areas are far less effective than the administration of that dose in a single injection. They fail frequently to produce any glycosuria; the quantity of dextrose in the urine, when present, is less, and the quantity of urine generally diminished. Thus, apparently, the more slowly injected epinephrin reaches the blood, the greater is its effect in producing glycosuria, and generally, also, the greater its diuretic action. I. S. Kleiner and S. J. Meltzer (Journal of Experimental Medicine, August, 1913).

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Use of Pituitrin in Spontaneous or Operative Hemorrhage in the Respiratory Passages.—The author has become convinced that pituitrin is of considerable value in hemorrhage in the respiratory passages, both as prophylactic and for curative purposes. The drug was used in 9 cases of hemorrhage after inferior turbinectomy, uni- or bi- lateral; in 2 similar cases as prophylactic, and also in 5 cases of epistaxis, in hemoptysis, and in purpura hemorrhagica. A single injection of 8 minims (0.5 c.c.) nearly always brought about arrest of moderate hemorrhage in average cases within ten or fifteen minutes. Where the first injection fails, a second subcutaneous, and later, if necessary, a third intramuscular, injection may be given. For preventive purposes the author has found it advantageous in intranasal operations to administer an injection of 8 minims (0.5 c.c.) fifteen minutes before the operation. The resulting hemostasis and vascular hypertension persist for about twenty-four hours. Citelli (Zeitschrift für Laryngologie, Rhinologie, und ihre Grenzgebiete, vi, 4; Revue hebdomadaire de laryngologie, etc., February 14, 1914).

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Relation of the Leucocytic Bacteriolysin to Body Fluids.—An extract of horse leucocytes is strongly bactericidal when dissolved in distilled water; it has considerable bactericidal power when dissolved in physiologic saline; but it loses its bactericidal properties when mixed with blood-serum or with normal or pathologic tissue fluids.

About half the antibactericidal action of blood-serum is due to the serum colloids, about a quarter to the neutral serum crystalloids, and a quarter to the diffusible alkalies. Diffusible acids have no antibactericidal acids.

The addition of boric acid to an inactive mixture of leucocytic extract and serum or other body fluid occasionally restores part of the original bactericidal power, but never more than a small fraction of that power. W. H. Manwaring (Journal of Experimental Medicine, April, 1913).

Infection of the Hypophysis by Way of the Sphenoid Sinuses.—The author presents a specimen of sella turcica which he had found filled with seropurulent fluid. The pituitary fossa communicated through a large perforation with the sphenoid sinus, which was likewise infected. The hypophysis itself was relatively but little affected, showing merely a slight degree of inflammation. This was due, on the one hand, to the fact that tissue resistance in the pituitary is rather marked, and, on the other, to the nature of the orifice of communication, which appeared to represent a persisting congenital abnormal opening. Another similar large opening was present in the posterior wall of the sella. This observation shows the possibility of infection of the hypophysis by a route hitherto but little or not at all recognized. Léri (Société de Neurologie, Paris, November 13, 1913; Paris médical, November 29, 1913).

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Epinephrin in Whooping-cough.—Report of a case illustrating the good effects of epinephrin in whooping-cough, as first advocated by G. V. Fletcher. The case was that of a delicate child of 7 years in whom pertussis was complicated with bronchitis, which was becoming more and more severe. The child had been ill for six weeks when the author began with the administration by mouth of 3 minims of 1:1000 epinephrin solution every four hours. Almost immediately a marked diminution in the severity and frequency of the paroxysms was noted. The author was soon able to limit the administration of the drug to three times a day, and continued it thus for three weeks, at the end of which time the child had completely recovered from the cough, and had steadily improved otherwise, there being a total disappearance of the anemia and wasting produced by the persistent vomiting. W. J. Lord (British Medical Journal; Medical Record, August 30, 1913).

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Pituglandol in the Treatment of Placenta Previa.—The author believes he has saved the life of some children and spared the mothers considerable loss of blood in cases of placenta previa by the use of pituglandol. In the marginal variety he injects 2 c.c. of the preparation and immediately punctures the membranes. In the central variety, depending upon the extent of dilatation, the injection follows version or the introduction of the metreurynter. The latter is generally expressed spontaneously in one-half hour, whereupon version may be rapidly performed. Another injection of pituglandol is then given, in order to induce spontaneous birth of the child. Piero Gall (Zentralblatt für Gynäkologie, March, 1913).

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Fish Diet and Iodine Contents of Thyroid.—The observation that a fish diet increased the iodine content of a dog's thyroid was made some time ago. The author states that definite evidence has been obtained that large quantities of iodine are constantly present in the thyroid in some species of salt-water fishes. The largest amount was found in the thy-

roid of *Scyllium canicula* (dogfish), and in one case much more iodine than in any thyroid previously reported upon. The research suggests that fish thyroid would be a valuable therapeutic agent, and that the iodine value of the diet plays an important part in determining that of the gland. A. J. Cameron (Biochemical Journal, October, 1913).

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Suprarenin Treatment of Heart Weakness in Pneumonia.—The author presents in detail the clinical history of a male domestic aged 32 years suffering from pneumonia. His life was being despaired of, and he had cyanosis, a temperature of over 105° F. (40.8° C.), a pulse rate of 140, and respiration rate of 58, when the author bled him to the extent of 10 ounces (300 c.c.)—the blood being observed to be very thick—and injected subcutaneously 1 pint (500 Gm.) of saline solution to which 8 minims (0.5 c.c.) of 1:1000 suprarenin solution had been added. Ten minutes later the patient's condition was vastly improved, and recovery soon followed. Lonhard (Deutsche medizinische Wochenschrift, November 2, 1913).

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Operations on the Hypophysis Cerebri.—The intracranial methods of reaching the pituitary, viz., the subtemporal or frontal routes, as well as the buccal method, all of which are attended with considerable risk, need not be considered. The transsphenoidal method of Schloffer and von Eiselsberg has as many supporters as the inferior nasal route (Kanavel and Cushing) or Hirsch's modified procedure. The latter, according to collective statistics, shows the lowest mortality, while Schloffer's procedure exhibits the highest. Of great importance are exact Röntgen-ray examination, precise removal of the turbinates and ethmoidal cells, prophylaxis of coryza and catarrhal disorders, and preparation with hexamethylenamine. M. Moritz (British Journal of Surgery, October, 1913).

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Epinephrin Treatment of Pernicious Vomiting in Pregnancy.—The various theories of the origin of pernicious vomiting in pregnancy can be placed in three groups: (1) Reflex theory; (2) nervous theory, and (3) toxic theory. The latter theory is considered valid by the author. Pregnancy leads to increased functional activity of the adrenals, which contributes to the processes of systemic defense. When this increase of adrenal function fails to occur, vomiting appears. In such cases the administration of epinephrin is, therefore, indicated. This agent is noxious neither to the mother nor the child. It acts rapidly and arrests the vomiting. Pedro Valle (Cronica medica; Revue de thérapeutique médico-chirurgicale, January 1, 1914).

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Menorrhagia in Hyperthyroidism.—Attention called to excessive menstrual flow as a symptom of hyperthyroidism. Usually, on questioning, the patient will say it is normal, but on further questioning one will

generally find it to be prolonged to five or even ten days, and abnormally free. In fully 85 per cent. of the author's observations he found this menorrhagia. It is usually not painful. Often the menorrhagia is blamed on venereal excesses, when the excesses and menorrhagia are both but symptoms of a hyperthyroidism. From a limited number of observations, the author deems hyperthyroidism a factor in the causation of some abortions. W. H. Good (Archives of Diagnosis, January, 1914).

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Effects of Pituitrin on the Child.—The rate of the fetal heart beat may be retarded after pituitrin injection. The drug may act harmfully in two ways: By rapid successive contractions continually compressing the placenta, leading to defective aëration of the fetal blood, and by passage of the drug directly into the fetal circulation, exerting a cardiovascular action. The author mentions a case of breech presentation in which he gave 2 injections of 0.5 c.c. within two hours. After the second injection, rhythmic contractions developed, and a normal delivery quickly followed. The child was born asphyxiated, however, pulsation being very slow and the respiration much retarded, and death supervened in half an hour. The autopsy of the child revealed nothing abnormal. Spaeth (The Antiseptic, October, 1913).

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Epinephrin Content of Adrenals in Various Forms of Experimental Poisoning.—The colorimetric method of detecting epinephrin, in particular Zanfrognini's procedure, was employed by the author in these experiments. He was able to demonstrate clearly a diminution of the epinephrin in the adrenal medulla in dogs poisoned with phosphorus, corrosive sublimate, and arsenic. The manner in which this loss in epinephrin takes place is not clear; the author thinks it possible that there may be a direct toxic action on the chromaffin cells, with consequent secretory paralysis. Rossi (Archives italiennes de biologie, lvii, 132; Nouveaux remèdes, January 24, 1914).

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Cystic Goiter.—Case of cystic goiter with palpitation of the heart, dizziness, and feet swollen over the shoetops. The patient became anemic, very irritable, and developed a tendency to melancholy. The only symptom which brought her to operation was that of pressure. Until she submitted to operation, the heart action was well controlled with thyroid extract and iodide of potassium, but the anemia did not improve. After the cystic goiter was removed all these symptoms disappeared, the anemia and breathing improved, and she felt much better. John Horni (Long Island Medical Journal, March, 1914).

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Action of a Lipoid Obtained from the Ovary.—Experiments showing that a lipoid extracted from ovarian tissue by the author, injected subcutaneously in animals for two or three months, exerts a stimulating action almost exclusively upon the uterus and ovaries, the weight of which

may be increased as much as fourfold. This lipoid has no action on the adrenals, kidneys, heart, liver, or spleen. It slightly excites the thyroid. Its effect on growth was studied in young female animals. It was found to increase the rate of growth considerably. H. Iscovesco (Société de Biologie, Paris, November 8, 1913; Presse médicale, November 19, 1913).

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Experimental Production of Vasodilator Substances.—Repeated injections of suprarenin in rabbits do not induce the formation of antibodies. Intraperitoneal injections of extracts of guinea-pig adrenals, however, bring about in some rabbits the formation of substances—previously not present—which exhibit a vasodilator property in frogs prepared by the Loeven-Trendelenburg method, and which inhibit the action of suprarenin, with which they combine to form substances the nature of which is as yet unknown. It is justifiable to consider these substances as fulfilling the rôle of antibodies with respect to suprarenin as an antigen. J. Halpern (Archiv für experimentelle Pathologie und Pharmakologie, October, 1913).

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Functional Disturbances of the Adrenals in Rabies.—Extracts of the adrenals of hydrophobic animals were tested as to their physiologic activities by the author. The effects of the extract on the blood-pressure differed according to the stage of the disease at which the adrenals had been obtained. Other influences of unknown nature were also observed to be operative. Toward the end of the disease the adrenal extract always proved inactive. A similar result was noted as regards the action of the extract on the heart. R. Porak (Comptes-rendus de la Société de Biologie, Paris, 1912; Zentralblatt für experimentellen Medizin, June 15, 1913).

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Pituitary Extract in Threatened Mammary Abscess.—While the employment of pituitary extract in the condition mentioned is not commonly thought of, experience leads the author to consider the drug very useful. It has been experimentally shown that within a few minutes after the injection of pituitary extract the flow of milk is much increased, owing to contraction of the muscular fibers of the lacteal duct walls. When these ducts contain pus and are blocked, this action is a useful one, and in two or three instances the author has found a threatened abscess to undergo absorption soon after giving pituitary extract. J. A. Henton White (Practitioner, September, 1913).

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Gold Chloride Test for Epinephrin.—Epinephrin yields a red color with chloride of gold. Upon the basis of his investigations with epinephrin in solution in distilled water, in tap water, and in distilled water to which 0.7 per cent. of sodium chloride had been added, the

author concludes that gold chloride in a 1 : 300 solution in distilled water will yield a clear reaction with 1 part in 500,000 of epinephrin. Gautier (Comptes-rendus de la Société de Biologie, Paris, 1912; Zentralblatt für experimentellen Medizin, June 15, 1913).

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Thyroid Treatment in the Vomiting of Pregnancy.—The author administered 1½-grain tabloids of thyroidin in several cases of hyperemesis gravidarum, and observed a complete curative effect. In 1 case vomiting was observed to recur after cessation of the medication, but yielded again when the treatment was resumed. A noteworthy observation was that, contrary to the usual accelerating effect of thyroidin, the pulse rate was decidedly slowed by it in these cases. Koreck (Deutsche medizinische Wochenschrift, No. 43, 1912; Zentralblatt für experimentellen Medizin, June 15, 1913).

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Exophthalmic Goiter of Traumatic Origin.—The author reports 3 cases of traumatic Basedow's disease, of which 1 showed the condition fully developed and 2 "frustes" forms of it. The disease came on one-half to several years after physical traumatism combined with psychic traumatism. The prognosis is not favorable in these cases; not much is to be hoped for from operative treatment. F. Dyrenfurth (Deutsche medizinische Wochenschrift, No. 47, 1912; Zentralblatt für experimentellen Medizin, May 30, 1913).

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Anomalous Situation of Adrenal Glands.—The authors report having found, upon post-mortem examination of a tuberculous patient, both adrenals situated within the capsules of the kidneys, with the tissues of which they appeared, even microscopically, to be completely fused. This finding is of interest in connection with the pathogenesis of hypernephromatous tumors. J. Rebattu and A. Goyet (Lyon médical, August 17, 1913).

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Influence of Epinephrin on the Action of Certain Drugs.—Epinephrin prevents the stage of excitement in the anesthesia brought on by chloralose. It also overcomes the convulsions induced under certain conditions by dyes such as thionin and methylene blue. J. Gautrelet and P. L. Briault (Société de Biologie, Paris, July 12, 1913; Paris médical, July 26, 1913).

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Relation of the Thyroid Gland to Marasmus.—There are two forms of atrophy of the thymus gland, primary and secondary. The organ has an undoubted relationship to nutrition. In a large number of fatal cases of marasmus in infants the author never failed to find what appeared to be primary atrophy of the thymus. Ruhräh (Lancet, August 8, 1913).

Department on General Medicine

Original Articles

A RÉSUMÉ OF MODERN OBSTETRICAL PRACTICE.*

By EDWARD A. SCHUMANN, M.D.,

PHILADELPHIA, PA.

The advance in method in the practice of obstetrics has brought in its train many variations in technique and differences in procedure for meeting a given indication, but opinions are gradually becoming well defined and a rather generally accepted system of practice has been developed. The management of obstetric patients may be divided into the care of the normal case, with its constant possibility of complications, and the treatment of the case known to have some pathologic element in its progress. Before a patient can be placed in either of these groups, it is necessary that the size of the pelvis be known, the metabolic activities of the body be investigated, and the general organic condition of the patient be understood.

The size of the pelvis is determined by direct measurement with the pelvimeter. From time to time many elaborate instruments have been devised for the purpose of measuring accurately those pelvic axes most difficult of reach, but for all practical purposes a simple instrument, as that of Collyer, used to measure the distances between the iliac crests, the iliac spines, the trochanters, and the external conjugate, together with a manual determination of the true conjugate, will give sufficient information as to the capacity of the pelvis.

Such measurement is of the greatest importance, as the subsequent conduct of the case depends largely upon the presence or absence of bony contraction or deformity. The specialist in obstetric work sees case upon case in which he is called upon to complete an attempted forceps delivery where the relative disproportion between the size of the fetal head and the pelvic outlet is so marked that delivery of a viable child is impossible and severe injury of the maternal soft tissues inevitable. In by far the greater number of such cases, had proper pelvic measurements been recorded early in the course of the pregnancy, the induction of premature labor might have resulted in the birth of a living child, with little or no maternal morbidity.

A careful and systematic vaginal examination should always be made at some time within the first four months of pregnancy. This is not only necessary in connection with the use of the pelvimeter to determine the diagonal and true conjugate, but should be undertaken for the purpose of securing information as to any lesion of the genital tract which might inter-

* Read before the Germantown Branch of the Philadelphia County Medical Society, October 30, 1913.

fere with the normal course and termination of the pregnancy. Fibroid tumors, retroverted and adherent uteri, with their prospects of later incarceration of that organ under the promontory of the sacrum, and other diseased conditions may in many instances be corrected if the true state of affairs be understood early in the pregnancy.

At this time it is well also to make a careful physical examination of the patient with reference to her ability to withstand the strains and stresses of pregnancy and labor. Certain organic lesions which in themselves give little or no trouble may prove serious complications in labor. For example, mitral stenosis with good compensation and a well-acting heart muscle may, in the presence of the increased strain thrown upon that organ in the course of a long and difficult labor, lead to an acute cardiac dilatation, with its very serious, not to say fatal, consequences.

An incipient tuberculosis may, and indeed generally does, make exceedingly rapid inroads upon the vitality of the pregnant woman. Let me here state that I consider early tuberculosis in a young woman a positive indication for the termination of pregnancy if the pulmonary lesion be discovered prior to the fourth month. This is a somewhat radical statement, but I feel it to be the only proper and justifiable one, and note that it has gained more and more adherents in the obstetric profession. After the fourth month the hemorrhage and shock of an induced abortion are so great that the benefits are minimized, and the end-result is probably no better than if the pregnancy were permitted to go to term.

Lesions of the kidneys are so generally considered of paramount importance that the routine examination of the urine at regular intervals is universal and requires no comment here.

The conduct of normal labor itself has not been much improved upon in late years. The importance of absolute asepsis and the more general use of rubber gloves are steps forward. In general, the practice of obstetrics has taken its proper place as a department of surgery rather than a branch of the practice of medicine.

The operation of episiotomy is one which, I think, should be more generally popularized, as it unquestionably diminishes the trauma occurring in a severe laceration of the perineum. The operation consists in the deliberate free incision of one or both vaginal sulci on either side of the rectum, when severe laceration appears inevitable. By this means the vaginal outlet is increased in size by fully as much as it would be from its laceration by the descending fetal head, but the mutilation is immeasurably less. The repair of a clean, sharp-edged wound is a very different matter from an attempt to coadapt torn and ragged muscles and fasciæ. The operation may be further improved by placing the sutures of silkworm gut or catgut immediately after the incisions have been made and leaving them untied, to be fastened when labor is completed. By this maneuver the cut surfaces are brought together in perfect apposition.

The use of extracts of the pituitary body in cases of inertia uteri has become widespread within the past few years. This drug is often of great

value, but must not be used before complete dilatation of the os has been secured. Its effect upon blood-pressure must also be remembered.

The Management of Complicated Labor.

Contracted Pelvis.—Less general advance, I believe, has been made in dealing with this situation than in any other branch of obstetrics. Given a pelvis with a true conjugate of from 8 to 9.5 cm. in a case wherein pregnancy has been permitted to go to term, what are the possibilities of spontaneous birth, delivery by forceps, or craniotomy, and what is the prognosis as to fetal mortality and maternal morbidity?

Spontaneous birth does occur, but at best in not more than two-thirds of the cases. (From my own observation I should challenge these figures, one-half or even two-fifths being a fairer estimate of the spontaneous births in the moderate degrees of pelvic contraction.) Such births always follow prolonged and exhausting labor. The other third (or half or three-fifths) of the cases suffer from mutilating forceps operations, or the infants are destroyed by craniotomy.

It is our obstetric duty to save this 33⅓ per cent., and that saving may best be accomplished by the intelligent induction of premature labor at a time when the child is small enough to pass through the contracted pelvis and yet is sufficiently mature to maintain its strength.

It is commonly taught that induction of labor should not be practised upon primiparæ, the theory being that, since spontaneous births do occur even in severely contracted pelves, every patient should have the benefit of at least one test of labor. I cannot agree with this teaching, for, since we may obtain accurate data as to the relative size of the fetal head and the pelvic outlet, a proper induction of labor in the selected cases may save the mother much agony, traumatism, and the disappointment of having her efforts rewarded by a dead baby.

As to the time for inducing labor, it varies with the individual case. Personally, I have performed this maneuver eight weeks before term with a happy result. Four to five weeks is a safe average.

Before determining upon induction of labor the pelvic dimensions should be well understood and the duration of pregnancy carefully estimated. In the latter connection I find McDonald's rule of great value if it be taken in connection with the details of the history and the physical aspect of the case. This rule, in brief, states that the height of the fundus uteri from the symphysis, measured along the anterior abdominal wall in centimeters, and divided by the constant 3.5, equals the duration of pregnancy in lunar months. For example, the height of the fundus at term is usually 35 cm. Divided by 3.5, this gives ten lunar months as the duration of the pregnancy. The relative size of the fetal head must now be determined. This may be done by any of the methods recommended by various authorities; but in general, a careful fitting of the head into the cavity of the pelvis at the end of the seventh month is sufficiently accurate for all practical purposes.

As to the method of inducing labor, I prefer the bougie, especially one which I have had made and which acts not only as a plain bougie, but also as an elastic bag. The latter extends the entire length of the ovum, and may be distended with water to any desired degree. With this bougie in position, labor usually sets in within from five to seven hours after its insertion. The technique is simple. Under the most scrupulous aseptic precautions the cervix is gently dilated, if necessary, either with the fingers or with a Goodell dilator. The membranes being unruptured, the collapsed and closely folded bougie is inserted between the fetal membranes and the uterine wall until the fundus is reached. The instrument is left in place for an hour or two, and then slowly distended with sterile water. Labor develops slowly and usually with periods of cessation of contractions, and must frequently be terminated by a low forceps operation. This, however, is usually easy owing to the gradual onset of labor and the small size of the fetal head, with the overlapping of the cranial bones that so readily takes place in premature children.

Many a child will be spared and many a woman saved from the distress and disability following a severe and tedious forceps delivery with laceration of the birth canal when the medical profession comes to a more general understanding and employment of the induction of premature labor.

As for *lacerations* of the birth canal, I consider the intermediate operation, performed several days after the birth, far superior to the immediate one, when the injury is severe. The swelling, edema, and bleeding in a recent tear militate greatly against an anatomic repair, and the results of such operations are frequently distorted, poorly closed perinei. If the operation be postponed for a few days, the patient is given an opportunity to recover from the shock and exhaustion of labor, the uterus and vagina have lost their swollen and edematous condition, and hemorrhage has ceased. The torn structures may now be well coadapted and a satisfactory repair made.

Placenta previa and its treatment has always been a debated subject among obstetricians. To my mind the indications are clear. Wherever the facilities are at hand, an elective Cesarean section is the treatment of choice. This statement must be modified in so far that section is not advocated when the patient is anemic and shocked from repeated hemorrhages, or where there is a possibility of infection from many vaginal examinations, or where the placenta previa is of the lateral or marginal variety. Under these conditions treatment by version and extraction, if the cervix is dilated, or if this is not the case dilatation with an elastic bag, is productive of the best results. On the other hand, in the severe cases of complete placenta previa, diagnosticated before hemorrhage becomes violent, the elective Cesarean section will greatly decrease fetal and maternal mortality. These are always surgical cases, to be treated in the hospital wherever possible.

Eclampsia presents no especially new features from the clinical side. Obstetricians are generally favoring the opinion that the essential measure in the treatment of eclampsia is the reduction of blood-pressure, both by the

use of drugs and by rupture of the membranes, excretion being meantime stimulated by all possible means.

A word may well be added with reference to the extraperitoneal Cesarean section practised by Sellheim and now being popularized in this country by Hirst. This is a procedure of the greatest merit, both from the theoretical and practical viewpoints. It consists, in the first place, in incising the parietal peritoneum through the usual median incision, but one made lower down than in the classical Cesarean section. The peritoneum covering the anterior surface of the uterus is also incised, and stripped slightly free from the uterus, and the cut edges of the parietal and visceral peritoneum are then united by suture. The portion of the uterus to be opened is thus entirely excluded from the general peritoneal cavity. The organ is next incised, the child and its membranes extracted by forceps, and the wound closed in the usual manner. Recovery after this operation is strikingly smooth and uneventful, and the dangers of infection are greatly decreased. The operation should not be practised, however, in the presence of placenta previa, for the reason that, the uterus being practically excluded from the operative field, there is no method of controlling possible hemorrhage after the delivery.

In conclusion, I may state that the main objects in the presentation of this brief outline have been to emphasize the necessity for the routine use of the pelvimeter in obstetric practice, and to urge the more general adoption of the induction of premature labor in the treatment of moderate degrees of pelvic contraction.

NOTE ON THE ADMINISTRATION OF DIGITALIC ACID, THE ACID RESIN OF DIGITALIS PURPUREA.*

By LOUIS KOLIPINSKI, M.D.,

WASHINGTON, D. C.

(*Concluded from the April issue.*)

Digitalic acid completely replaces the use of digitalis, both in its pharmacopeial preparations and the various advertised proprietary and secret preparations. The following cases will demonstrate most of the requisite qualities inherent in digitalis which it possesses—such qualities as the exigencies of various serious conditions demand of a successful remedy:—

Case 10. Multiparous female of 60 years. For many years hysterical. Formerly migraine, succeeded by facial neuralgia of one side, then of the other, and continuing for nine years. Passed off since a general massage treatment two years ago for about two months.

Neuritis of the right ulnar nerve with herpetic eruption on inner side of palm, and little and ring fingers. Recovery in a few weeks.

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Next, pruritus vulvæ of acute intensity, requiring a change of applications in local treatment every day or two, as the soothing qualities of the remedies seem to be lost after that time. The integument of the labia is dry, swollen, and reddish. The itching is very intense. She rolls upon the bed, screams out, cannot sleep, wishes for death. She cannot describe her state or converse, and only cries out: "I cannot stand it." Her behavior and manner is acutely hysterical. The intense itching appears in paroxysms, in the intervals between which she sleeps; but her sleep passes into a stupor.

Fever is detected, with temperature of 102° F. Physical examination of the chest discloses a heart slightly dilated and of enfeebled action; second aortic sound accentuated, pulse slow and of low tension; posteriorly in the interscapular regions, crepitant and subcrepitant râles and small areas void of air,—an incipient bronchopneumonia. This lesion subsides after two days under treatment, a slight occasional moist cough remaining and the temperature becoming normal, then subnormal. The stupor continues, the eyelids are closed, and she cannot be aroused by those about her; she weeps at times, but utters no articulate sound. The pruritus, at first vulvar, now becomes anal and then general. The vulva is red and angry, partly due to the friction and scratching, although her hands are constantly gloved. The anal region becomes moist, and a diffuse intertrigo is visible. At this time, the general pruritic stage, an urticaria becomes fully developed, but without vesicle formation. The wheals are large, yellowish white, and unusually indurated and leathery to the touch. They are found about the neck, forehead, right cheek, and about the thighs, arms, and trunk. The itching is less intense, but the stupor remains. The reflexes are slightly increased; the eyelids closed; the pupils not dilated, contracting in the light. From the puncture of the skin with a hypodermic needle she cries out sharply, more so from the painful sensation of one fluid injected than from another. Bowels loose; no vomiting. Two nightly attacks of right-sided epistaxis, most of the blood being swallowed and coloring the feces for some days. Urine normal. This phase of stupor was considered in the treatment as hysterical pseudomeningitis. The feeble heart impulse, slightly increased area of dullness, and accentuated second aortic sound led one to assume that if the heart weakness did not play a direct rôle in the origin of the sickness, it might play an important rôle in the recovery of her health or a persistence of the malady. The various local treatments recommended in books for pruritus were tried, and each failed after a day's use. Two local anesthetics were selected for hypodermic use, to mitigate the paroxysms of itching. The first was $\frac{1}{16}$ grain of morphine sulphate, the other a 1 per cent. solution of quinine and urea hydrochloride. Strange to note, the effect of the morphine was much the better, causing the pruritus to vanish and bringing on sleep. The patient had previously stated in her medical history that morphine as hypodermic injection caused in her nausea and vomiting for several days. The second anesthetic injection did not lead to such an effect as would lead one to recommend its further trial in a case of this kind, for anesthesia did not occur until after the fourth or fifth half-hourly repetition of the dose, the itching returning at the same hour the next day. The greater labia, into which the injection had been made, became indurated and a vulvar abscess on the right side later required incision. During this time, and until returning consciousness allowed her to converse rationally, she was given each day $\frac{1}{32}$ grain of the digitalate of sodium hypodermically. As long as the stupor continued this injection resulted in acute cries for a few minutes; later, upon her becoming rational, the cries ceased. After the fifth day of this treatment, the resin of digitalis was substituted,—$\frac{1}{33}$ grain by the mouth. Four days later the acute pruritus of vulva and anus seemed about to reappear, as at the beginning. The patient was again lapsing into stupor, her nights were highly restless, and the itching intense. She refused to take any more medicine. The temperature remained normal. It was necessary to renew the treatment with increased activity. Hypodermic use of the digitalate was resumed and ice-cold compresses of bicarbonate of sodium solution, 2 ounces to a gallon of water, were applied for half an hour four or five times a day to the sacrogluteal regions, lower abdomen, pudendum, and the interior surface of the thighs. The digitalate now did not produce the acute cries of the

former stage. The cold compresses were born without complaint, and had a very evident effect in stopping the itching and promoting sleep. The case showed marked improvement each day, and after the ninth day, at the patient's request, the hypodermic treatment was omitted on account of the acute pain resulting therefrom. The cold compresses likewise were dispensed with, as the pruritus no longer returned.

In this case the digitalate, used 20 times (often in half-doses) or more, caused no induration, infection, or abscess, and the pain experienced at the time of introduction was probably of great utility in arousing this patient from her acute hysterical lethargy and in bringing about rapid recovery.

Case 11. Male, 39 years, married, short and thick-set. Clerk; at one time an athlete. Dipsomania for some years. Excessive use of tobacco. Heart impulse weak, heart sounds faint, valves intact, pulse tension rate weak, neither slow nor rapid. Probably beginning fatty degeneration of heart. Liver slightly enlarged. Urine free of albumin and bile. Alcoholic neuritis of legs (pseudotabes). Memory weak, much egoism, outburst of rage and violence. Alcoholic tremor. The sodden, stolid, congested face of a drunkard. After a week of the digitalis resin, manner composed and reserved. No longer irritable. Facial expression almost normal.

Case 12. Saloonkeeper, 50 years, chronic alcoholism. In bed with acute alcoholic gastritis. Constant vomiting. Sleepless, very restless; hoarse voice, tremor of tongue and hands, incipient delirium tremens. Digitalis resin, first and second days, 2 doses; third day, 1 dose. Tremor gone in a day, and the patient holds a small object with steady hand. Recovery on third day.

Case 13. A proofreader, 50 years, short and stout. Obesity from beer drinking. Weight 175 pounds. Mitral regurgitation the result of articular rheumatism. Hypertrophy and dilatation of the left ventricle, dyspnea, and precordial pain from walking. Digitalis and salines given, with mixed milk diet. Takes digitalis well. Weight reduced to 160 pounds. Walking becomes easy. As result of an alcoholic debauch, acute gastritis and tremor appeared. Digitalis resin rapidly relieved him. He thinks the resin acts more quickly than does the powder.

Case 14. A farmer's wife, 5 feet, 48 years, weight 110 pounds. Menstruated last a year ago. Highest weight when a girl, 120. Atrophic nasal catarrh. Twelve children nursed at the breast. Persisted in doing all the housework during her married life, when able to be up. Presents the appearance of a worn, wrinkled, decrepit woman, this appearance being heightened by a dorsal kyphosis. For thirty-three years, has had migraine-like attacks of headache, with mucous vomiting. Confined to bed one or two days. Heart regular; aortic and mitral stenotic murmurs; pulmonary second sound loud and sharp. Ventricles slightly dilated, the right apparently more than the left. For six or nine months, dyspnea on walking. At night, cardiac asthma. As this was a headache due to fatigue from heart weakness, her industrious home life had amply perpetuated the headache for thirty-three years. Took digitalis resin for seven months. Afternoon rest and discontinuance of the laborious part of housekeeping. The headache ceased entirely. The appearance changed to that of a comely matron.

Case 15. A farmer, 51, single. Night pollutions once or twice a week. Is dyspeptic, languid, disinclined to work, and exhausted by summer heat. Aversion for female society. Weakened heart: tones faint, impulse feeble, heart slightly enlarged, valves intact; probably from masturbation. Digitalis resin given for months. Physical and mental vigor much improved. Heart sounds and impulse more distinct and stronger.

Case 16. A clerk of 56, height 5 feet 6 inches. For years, mental and physical lassitude and insomnia, much emaciation, chronic enteritis and phosphaturia; weight once 112 pounds, later increasing to 138 and 140 pounds. The man is chaste and moral. His debility is much increased by night pollutions every week or two. Weakened heart: no enlargement, impulse feeble, tones very faint. Pulse very regular. Aortic stenosis, but not distinct. The digitalis resin reduces the emissions to one or two a month. Much improvement in mental and physical strength and endurance.

Case 17. Female, 54, medium height, well nourished, 6 children. In her confine-

ments, prone to heavy uterine hemorrhage. Weakened heart, of many years' standing, probably fatty; valves intact, feeble impulse, pulse weak, small, and slow. Heart not enlarged. No dyspnea, but liable to syncope and faintness. A right pleuropneumonia begins. From the severe pleural pain, attacks of fainting. Digitalis resin twice a day, later once a day for five or six weeks. The pneumonic inflammation ceases in three days, relapses, and fever again disappears in three or four days. Slow but steady recovery.

Case 18. Unmarried woman, 51 years, 5 feet 6 inches. Once had a good constitution. Thirty years ago gonorrheal pelvic inflammation. Weight 130 pounds; five years ago it had risen to 168 pounds. Many years of sexual excitement, illicit coitus, and much masturbation; highly erotic. To these causes was probably due the cardiac hypertrophy and dilatation. Three years ago, exhaustion from summer heat. Vertigo, nausea; unable to walk out of doors because of dyspnea. With cooler weather, the symptoms of enfeebled circulation did not abate. Breathless and speechless. On ascending stairs, syncopal waverings and much muscular exhaustion. Heart impulse weak and diffused; loud aortic regurgitant murmurs, less distinct when at rest. Milk diet and salines reduce weight from 168 to 132 pounds. Took digitalis and iron in single or double daily doses for three months. No toxic interruption. Digitalis resin thereafter in daily dose for nine months. Tone of circulation fully restored. No dyspnea. Tires easily from work or exercise. State otherwise normal.

Case 19. Female, 46 years, a hard-working family mother. Weight 175 pounds. Metrorrhagia at times for a year. Face purplish red and swollen. Much shortness of breath on walking. Moist cough. Edema of legs. Had acute articular rheumatism. Gross mitral regurgitation, heart much dilated. Rest in bed, scant milk diet, and digitalis resin. Edema and hard breathing gone in two weeks. Loss of weight in that time, 5 pounds. Discontinues treatment.

Case 20. Unmarried female, 49 years, 5 feet 5 inches, weight 120 pounds. Menopause. Slight left hemiplegia with partial aphasia; more paralysis in arm than in leg. Some dyspnea at night while confined to bed. Heart dilated; mitral regurgitation with stenosis. Milk diet and digitalis resin. Able to walk in three weeks. Speech restored in six weeks. She is able to work and seems fully restored.

Case 21. Female, married, sterile, 5 feet 4½ inches, 52 years, weight 158 pounds. Menstruated last, fifteen years ago. Tertiary lues; syphilitic laryngitis. Suffers with vertigo, faintness, dyspnea on walking, and cardiac pains. At night, cardiac asthma, compelling her to sit up; edema of the ankles. Heart enlarged; both aortic and mitral stenoses. Digitalis powder relieves the breathing, but makes her nervous and excited. Sodium sulphate and phosphate daily reduce the weight in six months to 138 pounds. Takes the resin continuously for more than a year. Prefers it to the digitalis. In all this time heart acts well except upon one occasion when, after ascending many stairs, her breathing was disturbed for a single night.

Case 22. A small woman of 76, 6 children, weight about 80 pounds, of a consumptive family. All her life frail and slender, skin pale, no sickness in many years except monthly migraine attacks. Complains of great weakness, vertigo, and syncopal attacks, in which she falls. Extremities cold; edema of feet and ankles. Heart sounds and impulse very faint, no cardiac enlargement; no anemic heart murmurs; pulse very feeble, regular, 68. Fatty degeneration of the heart muscle. Digitalis resin for many months. Feels well from its use. No vertigo, syncope, or edema.

Case 23. Female, 48 years, medium height, highest weight 200 pounds, 4 children. Menopause. Chronic bronchitis for five or six years, with bronchiectasia. Dilated heart ventricles. Cough of great violence, lasting often thirty to forty-five minutes, especially in the morning; mucopurulent expectoration, a pint or less daily. From cough has had pulmonary hemorrhage. Never fever. No tubercle bacilli. Increasing dyspnea as heart becomes more dilated. Valves not affected, no edema. The heart enlargement is very apparent after the violent cough, when the lips and nails turn black. Often night sweats. Has lost 80 pounds or more. Respiration 28, at best 24. Digitalis acted

well, but, the dyspnea increasing, the resin was used instead, for ten months or longer. Never any gastric disturbance. On several occasions, when she was exhausted from want of sleep and food, dyspnea and cough appeared; she was then given double daily doses, with marked benefit. The pulse was kept steadily at 72 by the use of the drug.

Case 24. Male, plumber, 35 years, 5 feet 9 inches, weight 210 pounds. For years a drunkard. Heart enlarged, probably fatty; valves intact. Typhoid fever begins with incessant vomiting from alcoholic gastritis. Mind clear and anxious. After seven days of fever the pulse becomes rapid and weak, so that to avoid collapse or heart-failure the digitalate is begun. One twenty-fourth grain is given in the outer side of the right leg daily. Evening pulse 120, morning pulse 144. One-half hour after the injection, violent alcoholic delirium; total insomnia. Morphine aggravates excitement. Morning pulse 144, evening pulse after digitalate 120. Next day, morning pulse 120, evening 108. Morphine hypodermically has no effect on the sleepless, violent state. Sodium bromide is without effect. Hyoscine, $\frac{1}{100}$ grain, injected, brings on sleep and clears the mind. Morning pulse 108, evening pulse 96. Pulse good, but irregular. A long and severe relapse from eating solid food too soon made necessary a daily injection of the digitalate for twelve days. In convalescence, legs became edematous after patient left his bed.

Case 25. Male, 50 years, lives retired, many years free of labor and care. The obesity of overeating gained rapidly upon him until his weight was 270 pounds. For a long time, moderate dyspnea from exercise. With the approach of summer heat, he presented symptoms, partly of heat exhaustion, partly of heart exhaustion. Feelings of fainting and faintness; vertigo so severe that he cannot rise from a chair or leave his room. Insomnia; sensation of falling through the bed upon which he is lying. The heart on percussion is enlarged, whether from hypertrophy or fat is not certain, probably from both. The impulse is weak, as is the pulse, but regular and slightly accelerated. The valves close normally, but the mitral is not clear. Later, a simple mitral stenosis is detected, likewise a slight aortic stenosis. The subjective symptoms described continued throughout a summer, and he suffered much from depression of spirits and fear of death. The treatment consisted of a reduced diet, a daily saline purgative, and a single daily dose of powdered digitalis, 2 to 2½ grains. Under this treatment his weight was reduced in seven or eight months to 210 pounds. He resumed his former life of sport and exercise. The various morbid sensations disappeared, in particular the dyspnea from exertion. This patient took digitalis powder daily for about six months without any sensation of disturbance. The resin was then given instead, and continued for eight or nine months. He was not able to perceive any difference in the action of the two. Both gave him a sense of vigor and easy and unconscious breathing. His preference later, however, inclined toward the resin.

Case 26. Single female, 38 years, 5 feet 8 inches. Taken from school at 16 on account of physical weakness. Since then, semi-invalid; occasionally engaged in study, teaching, and household work. No hysteria, but timid from ill health, and very susceptible to the overeffects of drugs. Prone to bronchial cough, moist râles, and asthmatic breathing. Menstruates for a day at long intervals—six months to two years. Chlorosis as a girl uncertain. Has the appearance of incipient consumption, and a weight of 110 pounds. On a full milk diet the weight ascends to 155 pounds, with great improvement in health. Suddenly, dilatation of the heart, with cardiac asthma. Slow recession of the dilatation and dyspnea. Confined to bed for months. Much emaciation and weakness. With the use of digitalis powder and iron, some further improvement occurs, so that she is able again to leave her bed, be up, and occasionally to go out. The radial pulse is regular, accelerated when at rest, and unusually small. No jugular pulsation. Color pale; a look of exhaustion. She is not able to lie down by day longer than a quarter of an hour; her nights are passed in a sitting or at best a half-reclining posture, on three or four pillows. Occasionally, cardiac asthma at night and asthmatic wheezing and cough in the morning. Mammary glands almost masculine. Heart dullness increased to the left; apex beat to the left and impulse weak. Right ventricle not dilated; no epigastric pulsation. Heart sounds faint; occasionally mitral insufficiency

murmur. Diagnosis: Congenital small heart and aortic system. She is very susceptible to digitalis, which readily causes nausea. Digitalis resin used for many months; a double dose causes palpitation, cardiac pain, and more labored breathing at night. Digitalate of sodium hypodermically is, however, more efficient than the resin. The pulse becomes slowed to normal and the nights are very markedly bettered.

Case 27. Single female, 28 years, 6 feet, weight 128 pounds, phthisical habitus, cold hands and feet. Congenital small heart and aorta. For some time, shortness of breath on walking up hill. The apex beat is weak; valves intact; contractions and pulse occasionally irregular or rapid. Subject to severe precordial and epigastric pains, coming on suddenly, generally at night. In such an attack the right ventricle is outlined as dilated. A daily tablet of digitalis resin is given. Patient neglects treatment after some weeks, as heart action causes her no further distress.

Case 28. A young girl of 18 years, 5 feet 2 inches, weight 200 pounds. Two and a half years ago her weight was 133. Works in a candy store. A hearty eater, and daily partaker of the sweets she sells. Palpitation and oppressed breathing. Heart suddenly becomes insufficient. She is confined to bed with cardiac asthma and considerable edema of the lower limbs. Heart ventricles dilated; heart sounds normal, but very faint. Slight epigastric pulsation. No venous pulse in the neck. Pulse not rapid or irregular, but small and weak. Low milk diet, salines, and the resin allow her to return to work in two weeks; compensation fully restored. She gradually regains strength and former habits. The resin is taken for a year. Potassium iodide, desiccated thyroid, salines, and a restricted diet (not kept), all failed completely to reduce the weight, which continues at from 196 to 200 pounds.

Case 29. Physician, 59 years, 5 feet 11 inches. At 21 acute articular rheumatism, from which he recovered after one year. His health before this had been good, his weight 160 pounds, and his vigor and endurance excellent. There was a gradual increase in weight with years, the maximum being 220 pounds. In an attack of influenza he had attacks of vertigo and fainting (weakened heart), from which he recovered. Five years later, circulatory compensation failed. Physical examination disclosed a dilated heart, probably from obesity, weak impulse, and irregular action. Both aortic and mitral stenosis. No albuminuria. Attacks of faintness and dyspnea after a walk or slight muscular effort. Cardiac asthma at night, but not severe. Considerable edema of the lower limbs, to the thighs. Treated with rest, sodium salines, reduced diet, and powdered digitalis, 2 to 2½ grains daily. The breathing is normal and the edema is lost. The digitalis is well taken, but occasionally omitted for a few days because of the nausea it produces after seven or eight days. The digitalis resin is given instead, 1/33 grain daily, in a single dose. The patient takes the resin daily for months. Heart compensation is fully restored. The weight falls in a year from 220 to 182 pounds. In his opinion, from the impression he had after having taken the resin a long while, the resin was better than digitalis powder in his case, as it never nauseated, and the invigorating sensation it produced was more quickly felt than that from digitalis.

Case 30. Married female, 24 years, 5 feet 4 inches, married eight years, no child. Menstruation irregular. Six months ago, weight 168 pounds. Abdomen distended, much edema of the legs, dyspnea on walking and lying down at night; interfered with by oppressed breathing. Urine diminished; albumin and casts; almost anuria. Anemic; face swollen; cardiac palpitation. Palpation and auscultation of abdomen shows an active pregnancy; free fetal motions; about seven months. She does not know that she is pregnant. The dropsy, oppressed breathing and very scanty urine require rest in bed, milk diet, digitalis resin, and saline purgation. With these the urine increases to 5 or 6 pints a day, the edema of the legs disappears, and the breathing becomes normal. Heart is enlarged from hypertrophy and dilatation; increased area of dullness, left and right; a gross mitral regurgitant murmur. Labor at term; forceps; speedy recovery. Nurses child a year. Albumin absent from urine in five or six weeks.

Case 31. Single female, 42 years, 5 feet 7 inches; was overweight, 186 pounds; reduced in six months by treatment to 145 pounds. Is hysterical, emotional and sleepless,

easily fatigued, dyspneic from walking. Cold hands and feet. Twenty years ago, severe typhoid fever, with three relapses. Gangrenous bedsores with septicemia; recovery in a year. Heart area not enlarged; valves intact except aortic stenosis; heart sounds feeble and weak, 60 to 68. Fibroid myocarditis from the septic typhoid fever. Is suddenly stricken with chill, temperature 104.5° F.; nausea, vomiting, and diarrhea, with much tympanites. Marked exhaustion. Heart sounds not changed, even fainter than before. The weak pulse is 82, while the fever is 105° F. Quinine without effect. Leucocytes slightly increased. Widal reaction negative. Urine free of albumin. Her main complaint is a distressing feeling, as of impending death. Diagnosis: Ptomaine poisoning with heart weak from myocarditic change of the ventricle.

Is given the digitalate in a daily hypodermic injection of $\frac{1}{32}$ grain:—

First day.	Morning temperature 101°,	pulse 72 soft
	Evening temperature 102°,	pulse 82
Second day.	Morning temperature 100°,	pulse 82
	Evening temperature 101.5°,	pulse 72

The tension is better, the faintness not felt any more.

Third day.	Morning temperature 98°,	pulse 72
	Evening temperature 100°,	pulse 72
Fourth day.	Morning temperature 97.8°,	pulse 72
	Evening temperature 99°,	pulse 72
Fifth day.	Morning temperature 98°,	pulse 68

Case 32. Bricklayer, 45 years, small and spare. On walking, short of breath, with asthmatic wheezing. Heart palpitates. Pulse weak and irregular; valves intact, heart sounds faint. Weak heart of myocarditis, in part due to tobacco, which he uses freely. Is impotent; erectile power abolished. Sounding shows no disease of urethra or prostate. Digitalis resin and disuse of tobacco relieves him of labored breathing in two weeks. He continues its use for two months. Returns three months later and declares himself cured.

Case 33. A man, 76 years, spare habit, excessive user of tobacco; otherwise good habits. Arteriosclerosis from gout; heart irregular, pulse slowed; aortic stenosis. Chronic myocarditis from the gout, through the atheroma; urine normal. A small brain embolus; syncope, loss of speech, and paresis of left arm. Rest in bed for a week, when he is able to be up again. Stops willingly the use of tobacco. He is very forgetful, hears voices, and speaks to the absent as though present. Is tractable and friendly. The digitalis resin makes the heart contractions regular and his mind approaches its former state. Exercise does not cause fatigue and sleep is refreshing. He visits the seashore, although the anticipated benefit to his health is doubtful, and dies there within a day of cerebral apoplexy or a second brain embolus.

Case 34. Married woman, 52, 2 children, 5 feet 5 inches, highest weight 177 pounds, present weight 160. Last menstruation three years ago. Attacks of angina pectoris for the past three months. First attack at night, mistaken for indigestion. The pain is behind sternum, into both arms. Some nausea and belching; the pain is also in the back between the shoulder-blades. The angina comes on also in walking more than a block or two and on ascending stairs, with panting of breath and oppressed speech. Pulse 72. Blood-pressure after digitalis, 140. Suprasternal aortic pulsation perceptible; aortic stenotic murmur; apex beat very faint; mitral and pulmonic sounds very faint; heart area slightly increased. Radial and temporal arteries soft. Diagnosis, fibroid myocarditis with sclerosis of coronary arteries. This cannot be traced to its cause. Sodium sulphate and phosphate to reduce the weight, and with them the digitalis resin in 2 daily doses of $\frac{1}{32}$ grain each. The pain on walking ceases. A single daily dose was not sufficient to accomplish this.

Case 35. A clerk of 72, uses strong smoking tobacco freely, formerly a steady drinker of whisky. Somewhat suddenly, severe vertigo, so that he must remain in bed; transient ataxic and amnesic aphasia. Numbness and spasmodic stiffness of right arm

and hand, no arteriosclerosis. Heart beat irregular; area of dullness increased to left; aortic stenosis and mitral regurgitant murmurs; pronounced bruit de galop. For many years excellent health. Fibroid myocarditis, probably from the alcohol and tobacco. Rest in bed; milk diet, sodium sulphate and phosphate, and the digitalis resin. For a year his state is normal save a little hard breathing on mounting stairs. A return to the pipe and glass causes a return of vertigo and numbness in the right arm, which again yields to the same treatment. The resin was taken for twelve months without omission.

Case 36. Married woman, 67 years. Has had heart disease for eight or nine years. Dyspnea from exertion. Paroxysmal tachycardia, lasting some hours. Both aortic and mitral stenosis. Ventricles dilated; heart action regular, but weak. Three years ago, was run over by a taxicab. Fracture left lower radius, and right leg, lower third, much bruised. In bed six months. Is now in her home, semi-invalid. Fibrous ankylosis of the right knee-joint; edema of legs, more of the right, which is also purplish from passive congestion. Urine normal. Is treated with afternoon rest, bandage, and digitalis resin. The edema disappears rapidly.

Case 37. Female, 5 feet 3 inches, 50 years. Menopause; weight 150 pounds. At 45 years, weight 138 pounds. For many years weight was 175 and more. After childbirth twenty-one years ago, first appeared urticaria, which has been chronic ever since. The attacks last ten to fourteen days; they reappear every few months. The urticaria is sometimes hemorrhagic, oftener vesicular or bullous. The blebs, on bursting, leave excoriations that heal rapidly. Has been dyspneic on walking for years. For the past four years, cardiac asthma; severe attacks by day, oftener by night. A chronic cough with little expectoration, in paroxysms, like whooping-cough. Respiratory sounds normal; heart dullness increased to left; hypertrophy and dilatation of both ventricles; heart sounds faint, accentuated second pulmonic sound; apex impulse to left and feeble. A virgin case, as she has received neither treatment nor diagnosis. Digitalis resin, afternoon rest of two or three hours, light housework only. The urticaria, cardiac asthma, and chronic cough disappeared together.

Case 38. Female, 70. Twelve children, all breast nursed. For many years good health. Her weight gradually increased; fifteen years ago it reached 200 pounds. For a year and a half, breathless and speechless on ascending stairs; night attacks of cardiac asthma, increasing in severity. Heart action irregular; mitral insufficiency and aortic stenosis murmurs. Heart plainly dilated. Milk diet to reduce the weight, and 2 grains of digitalis daily. From this treatment weight reduced about 20 pounds in six months and breathing again normal. Too active life and too little rest cause the oppressed breathing to return in nocturnal paroxysms. Is given the resin. Prompt relief. In her opinion the resin acts more quickly than does digitalis, which she took, however, a long time without nausea, vomiting, or diarrhea.

Case 39. Female, 55 years, medium figure and weight. Child's nurse. For some years short of breath on going upstairs. For a year cardiac asthma at night, often compelling her to sit up more or less for several hours. Suddenly upon going upstairs in the evening, a violent attack of asthma humidum makes her fall, gasping, coughing, and speechless, to the floor. Much bloody mucus and serum is expectorated. A hypodermic injection of digitalate relieves in an hour. The resin is taken for fifteen months, with normal breathing all the time. In this case the pulse is 60; heart action occasionally irregular, heart slightly enlarged to left, valves intact. Heart sounds much louder than normal. Accentuated pulmonic second sound; fibroid myocarditis.

Case 40. A woman, 72, 5 feet 5 inches, married, childless. When a young woman pelvic peritonitis or abscess with long illness. Arthritis deformans and sciatica, little joint deformity, mobility good. Obesity to 190 pounds. Croupous and broncho- pneumonias, pulse slow, heart at times irregular, heart sounds sharp, valves intact, impulse very weak. Heart enlarged to left; a chronic myocarditis, probably from the arthritis deformans. The weakened heart results in pulmonary and general venous stasis. Urine scanty, but not albuminous. Chronic bronchitis with some expectoration and a most

harassing night cough. Much dyspnea and speechless on ascending stairs. At night, cardiac asthma. For about six weeks is unable to lie down at night and declares that she is able to sleep in a chair with some comfort. Much edema of lower limbs and moderate ascites, liver markedly enlarged. Milk diet and daily saline, sodium sulphate and phosphate. Two grains of digitalis a day, of which she is very tolerant. With this treatment the circulation rights itself. Free diuresis and purging; the edema goes away; the night dyspnea is lost. She is again able to go to bed with comfort, but at first with timid uncertainty, as the dyspneic horror made her fear the bed as an associate of nightly distress. The weight sinks to 150 pounds. After three or four weeks of digitalis, she is given instead the digitalic acid, $\frac{1}{33}$ grain each day. This is continued without omission for more than a year. In the summer the bronchitis is lost. She is able to travel. Her daily life and customary habits are resumed. In this case an afternoon rest of two or three hours is of great benefit. The slow, myocarditic pulse is often kept at 54 with the resin for days. She feels stronger with than without the remedy and is inconvenienced when she misses it for a day.

Case 41. Male, 77 years, never obese, a draughtsman, formerly a foot soldier. Occasional attacks of gout (transient) in knee-joints. Original attack not found out. Arteriosclerosis, heart valves intact; hard, slow pulse; heart impulse diffused, sounds loud, contractions irregular; hence the gout succeeded by arteriosclerosis, followed by fibroid myocarditis; urine normal. Five years ago amnesic aphasia, speech fully recovered. Later small or superficial brain embolus. No paralysis, but forgetful, irritable, much headache, confusion of mind and apathy, unfit for work or mental effort. Persistent edema of legs, greater in right. With rest in bed and digitalis resin for a long time the dropsy is reabsorbed; torpidity of mind remains.

Case 42. Male, 92 years; in former years an army officer, later a clerk. Arterial and aortic sclerosis, marked aortic stenosis, pulse weak and intermittent, 60; heart impulse weak, area dullness increased to left, ventricle dilated; fibroid myocarditis. Much muscular weakness and rapid emaciation; cardiac asthma at night, severe suffocative seizures from walking or ascending stairs. Much edema of legs. Milk diet, rest in bed, and the resin for a year in daily dose. Dyspnea, bronchial catarrh, and swollen limbs, all removed; breathing very slow and regular. There remain insomnia, tædium vitæ, probably from weakness, depression, and disappointment from his invalid state.

Case 43. A widower, 76 years, was well built and muscular. A veteran of the Civil War, severely wounded, later a clerk. Gradually failing with weakness, emaciation, able to walk only a block. He staggers and totters, has fallen, often contused legs from striking against edges of bodies. Has had a mucous prostatic discharge from the urethra, obstinate constipation. Is much depressed in mind, thinks he will not work again. Slight ataxia of hands, writing not affected. No ocular paralysis. Pupils not unequal, react to light but slightly and very feebly. Patellar reflexes lost. Much lumbar pain and sciatic and crural neuralgias. Attacks of epigastric crises with incessant vomiting for three to five days. Atheroma, aorta and arteries of extremities. No venereal history, no articular rheumatism. Blowing diastolic right aortic murmur, not at apex. Left ventricle hypertrophied and dilated, apex impulse to left in sixth intercostal space. Pulsating carotids marked. Apex beat raises finger. Dullness to right of sternum in second intercostal space from dilatation of ascending aorta. Pulsating arteries visible, radial and brachial besides the carotid. Pulsus celer very marked. Whether this case was one of developed tabes, as the symptoms indicate, except the pupil reaction, or whether these tabetic symptoms present a group found in the aged, a malady *sui generis*, or finally that aortic regurgitation with atheroma (venereal or not) can produce the disease here described, must be determined later. The patient made a complete recovery. The digitalic acid was taken for eighteen months. The other treatment was that appropriate to locomotor ataxia.

Case 44. Female, 60 years, 5 children, invalid for years. Is deaf from chronic otitis, loud tinnitus, headache; vertigo more or less constantly, with nausea and vomiting; occipital pain; in walking, reels or staggers; brain tumor was diagnosed and exploratory

operation advised. Heart markedly dilated, atheroma of aorta, aortic regurgitation. Partly from ill health, partly from hysteria, her state is one of apathy and helplessness. Digitalis, 2 grains daily, at end of week, no effect. Digitalis resin in place of it, 1 daily dose. The vertigo, headache, staggering, nausea, vomiting, and pain in occiput cease; noise in the ear less, deafness the same. Revives and is able to be about, ride out and does light handwork. After three months discontinues treatment.

Case 45. A man, 5 feet 10 inches, formerly weighed over 200 pounds. For many months a suppurating cavity in the right upper lobe of the lung, with prolonged septic fever. Physical signs lung tuberculosis. Tubercle bacillus not found in many sputum examinations. Antisyphilitic treatment of no effect. The heart hypertrophied and dilated; the heart action rapid, diffused, and irregular; the valves apparently intact. The urine scanty and highly albuminous; no sugar. An edema appears about feet and ankles, rapidly increases and spreads to the external genitals, back, and walls of the abdomen. A single dose a day of the resin diminishes the dyspnea, does not influence the excessive cough and expectoration, or the rapidly forming dropsy. The dose is doubled, 2 doses each day. Within two and one-half days the urine increases to 7 or 8 pints daily, albumin of urine much less. After four days the dropsy has disappeared completely. The suffocative breathing increased to a high degree of intensity at night. Sudden death from hemoptysis five days later.

Cyclopedia of Current General Literature

Acute Intoxication in Infants, Use of Dextrose Solutions in.—In such cases, because of the severe diarrhea, food must be administered by the subcutaneous or intravenous route. Sugar, thus given, is not only well tolerated, but, the worse the condition, the greater the sugar tolerance. In cyclic vomiting, usually with intense acidosis, saline-dextrose solutions by clysma by the drop method have given good results.

The author's routine method of treatment in acute intoxication in infants is to withhold all food for from twelve to twenty-four hours, giving merely water or tea by mouth, and stimulating the failing circulation by the use of caffeine, camphorated oil, brandy, and saline solution subcutaneously.

The dextrose solution, as used by the author, is prepared as follows: To 1000 c.c. of freshly distilled water add. dextrose, 60 Gm.; sodium chloride, 7.5; sodium bicarbonate, 0.2; calcium chloride, 0.2, and potassium chloride, 0.2. Filter and sterilize in flasks of about 100 c.c. capacity. The solution is given hypodermically, either by gravity or by means of a large syringe, in doses of from 50 to 200 c.c. It is injected under the skin of the abdomen or under the pectoral muscles. The smaller doses at short intervals are to be preferred.

This solution was given in about 20 cases, most of the patients being *in extremis*. In not a single instance was sugar found in the urine. It would appear that the infant in a state of intoxication can tolerate from 4 to 6 Gm. of sugar two or three times a day and completely utilize it. Study of weight-charts shows that the water is retained better with the sugar than without it, so that the sugar solution is preferable to salt solution. In several instances in which the toxemia was intense the

loss of weight was comparatively slight, and at no time during the injection was there any palpable edema to explain the maintenance of weight. In only exceptional cases were the losses in weight such as one is accustomed to see in these cases. In the majority of cases there was a definite improvement manifested (1) in a tendency to come out of the coma; (2) in an improvement of the turgor, and (3) in the circulation. In one or two instances it seemed to be the only thing that kept the infant alive. H. F. Helmholz (Journal of the American Medical Association, December 13, 1913).

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Burns, Management of.—After giving a hypodermic injection of morphine and atropine, the dose varying with the age of the patient and the severity of the case, the burned area should be immersed, if it be on an extremity, in cold water to which has been added either a teaspoonful of sodium bicarbonate or common salt to the quart of water. A temperature of about 50° or 60° F. is best. If the burned area, on account of its location, cannot be immersed in water, it may be covered with a light, smooth cloth which has been dipped in the solution; then by gently and continuously applying the solution to this cloth the same result will be obtained. This water-bath may be continued for some time, or until the systemic effect of the morphine is manifested.

The author condemns the puncturing of blisters immediately after a burn. In most cases the raised epidermis acts as an irritant, and for several days causes serum to be poured out under the dressings, to soil them and furnish a good culture for pus-producing germs. Within a few days the epithelial cells in the deep glands of the skin will have accomplished their work of repair if properly protected by the blister. If any blisters are accidentally burst, with the epidermis rolled up or displaced to any extent, it is better to remove such epidermis at once.

After the patient is fairly comfortable from the bicarbonate bath or morphine, the bath may be discontinued and the burned area, with the surrounding surface, sprayed or mopped with hydrogen peroxide. The entire surface should then be mopped with dry gauze. Next one should apply strips of gauze, previously soaked in a 2 per cent. solution of picric acid in dilute alcohol. Over this should be applied a thin layer of cotton, held in place with adhesive strips or a roller bandage. This dressing may remain until it is soiled, at which time all soiled or wet dressings should be removed, the part cleansed with hydrogen peroxide, mopped dry, and fresh gauze soaked in the picric acid solution reapplied. About the third day one may open all blisters and mop away the fluid contents, applying then a fresh dressing, as before.

Where sloughing occurs as a result of charred tissue, or later as a result of infection, the dead tissue should be removed as rapidly as it becomes loosened. Then the underlying exposed surface should be cleansed with hydrogen peroxide, dried, and mopped with the picric acid solution. Over this one should put strips of rubber tissue kept in a 1:1000 bichloride of mercury solution, after which the picric acid compresses and

cotton should be applied as before. If the rubber tissue is applied in narrow strips and the edges permitted to overlap, the dressing will more perfectly adapt itself to the irregular surface. This dressing should be changed as often as is necessary to keep the surface clean and free from pus. J. C. Plain (American Journal of Surgery, March, 1914).

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Circumcision, Substitute for Sutures in.—Sutures are almost always unnecessary in circumcision; they add to the length and pain of the operation, make the subject more prone to infection, and often leave stitch scars. The writer avoids them entirely by the following method: After the prepuce and the mucous membrane have been cut away in the usual manner, the skin and the mucous membrane can be made to adhere together very satisfactorily by applying several hemostats around the cut surface, placing them on the skin from before backward in such a manner as to grasp the mucous membrane and the skin with edges approximating between the jaws of the hemostat for ⅓ inch, and compressing the jaws tightly. The fenestrations of the blades press the tissues together in corrugated ridges, and they will remain adherent, when after a few minutes, the hemostats are removed. No sloughing occurs at the point of compression. The usual circular dressing is applied, leaving the meatus free. This dressing is changed every twenty-four to thirty-six hours. Healing is usually by first intention. In a very small percentage of cases a bleeding vessel may have to be ligated, but this occurrence is very rare and generally compression controls the hemorrhage. S. Meredith Strong (American Journal of Surgery, March, 1914).

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Diabetes, Dry Vegetable Diet in.—The author refers to the fact that von Noorden has shown the advantage of an oatmeal diet in diabetics in a state of acidosis; but often this diet is not well borne, and it does not supply sufficient protein. The author, therefore, substituted for it a dry leguminous diet which has given him excellent results: The patient takes daily 300 Gm. of dried legumins (peas, beans, lentils), 150 Gm. of butter, 3 to 6 eggs, and 3 to 6 aleuronat or gluten rolls. Green legumins may also be given. For the ordinary dry legumins soy beans may be substituted with advantage, in consequence of their richness in protein and poorness in starch; but they are difficult to cook.

This diet is usually well borne, and patients prefer it to one of oatmeal or milk. It satisfies the appetite better than milk, and does not constipate. It does not cause diarrhea, like oatmeal, and is easily digested. The treatment must be followed for at least three days at a time; some patients followed it for a week or longer.

The effects are remarkable, especially in the severe forms of diabetes. In spite of the large proportion of starch in the diet, the glycosuria is often not higher than under a diet poor in carbohydrates; sometimes it is less; occasionally it even ceases, though it has failed to yield to other diets. It seemed evident that the starch of dried legumins is better utilized by diabetics than that of other foods. Thus, in one case there was shown a tolerance of 65 Gm.,

while under oatmeal diet the amount was 35 Gm., under milk 15 Gm., and under a mixed diet, including meat, 42 Gm. more of glucose were passed than corresponded to the amount of starch taken. In combating nitrogenous loss the advantage of the leguminous diet was found still greater. A number of observations showed that under it the nitrogenous balance was strongly positive, while under oatmeal it was in equilibrium, under milk diet negative, and under a mixed diet strongly negative. Thus, the protein of dried legumins is better utilized than that of flesh, milk, or cereals.

In acidosis the dried legumins are of great value. Under this diet the author has often seen the somnolence and anorexia disappear, and the threatening coma be postponed. It diminishes the acidity of the urine more than the other diets. Of all diets the leguminous gives the least acetonuria. It also diminishes the diaceturia, and sometimes even causes it to disappear. Finally, it diminishes the proportion of nitrogen colloid in the urine, while at the same time increasing the ammonia and amino acids. Marcel Labbé (Bulletin de l'Académie de Médecine, January 13, 1914).

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Emetine, Effects of, on the Heart.—Experimentally the author found that emetine hydrochloride in toxic amounts is capable of causing disturbances of the cardiac contractions and ultimately arrest of the heart in diastole. During the course of these effects he noticed that there was disordered excitability and contractility of the heart muscle, manifested particularly in an abnormal response of the heart to faradic stimulation applied directly to the ventricle. Occurring in the presence of auriculoventricular dissociation, these effects show that heart block may have as its cause, independently of all lesion of the bundle of His, disturbances relating exclusively to the contractility and excitability of the heart muscle. R. Moulinier (Journal de médecine de Bordeaux, February 15, 1914).

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Gastric Cancer, Diagnosis of.—The negative or positive diagnosis of gastric carcinoma may be made with as great a degree of accuracy by serial röntgenography as by exploratory laparotomy, and without risk to the patient. The author is not content with less than 40 röntgenograms, and frequently makes 70 or 80, which are set up where they may be studied individually and collectively, and superimposed for comparison. The examination is necessarily an expensive one, but, like surgery, it may be placed within the means of all patients.

The röntgenologic diagnosis described is based on permanent, constant deformities in the gastric wall, which interfere with the systole and diastole of the stomach, and the progression pylorusward of peristalsis. These lesions may be detected at practically any stage of development, and in many cases the different types may be differentiated with a reasonable degree of certainty.

A negative and positive diagnosis of gastric cancer was made in each of the 616 cases examined by the author with serial röntgenography, and in not a single case, to his knowledge, where he made a negative diagnosis of gastric cancer or indurated gastric ulcer did surgery or autopsy subse-

quently prove the existence of such a lesion, nor did surgery or autopsy fail to reveal a definite organic lesion requiring surgical procedure in any case in which a positive diagnosis of carcinoma or indurated ulcer had been made. Ninety-seven cases have been operated on. In 94 the röntgenologic diagnosis was proved absolutely correct. In 3 cases the surgical findings were more or less at variance with the röntgenologic findings.

On the whole, gastric cancer at any stage of development, or indurated gastric ulcer, may be detected by the use of serial röntgenography with as great a degree of accuracy as renal calculi or bone fractures may be detected by plain röntgenography. The time has come when a surgeon must not operate on a chronic gastroduodenal lesion without thorough röntgenologic examination. Lewis Gregory Cole (New York Medical Journal, February 14, 1914).

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Hyperacidity of the Stomach, Treatment of.—In the drug treatment of this condition the author prefers magnesium oxide to sodium bicarbonate, and combines it with small amounts of belladonna and a purgative salt, such as sodium sulphate. With the latter he aims to produce a transudation of fluid into the intestine and so to diminish the secretion of the stomach glands. Some other acid-binding drugs, as powdered charcoal, kaolin, and aluminum silicate, act in another way, by mechanical absorption, and each of them is worth trying occasionally.

With regard to the diet, the author strictly observes the following rules, which he believes to be essential:—

1. All food must be well cooked and most carefully minced. This is based on his theory that the chief business of the stomach is to reduce the food into small pieces, not by its muscular force, but by chemical influences. Pieces not broken up remain for a long time in the stomach, while fluids are rapidly pushed forward.

2. The stomach must come to rest at least once during the twenty-four hours. This can best be arranged by changing the usual time of meals. The patients should eat much food in the morning, but only a small quantity in the evening. During the forenoon, when the patients suffer the least from pain, they should take two or three meals at intervals of two hours, so that there is little appetite left for lunch. After lunch they do not take anything until 7 P.M., when only porridge is given. The author has obtained very good results with this method.

3. Drinking should be generally diminished and restricted to those hours when the stomach is not filled with food. The meals are, therefore, given rather dry, except the first breakfast and the evening soup, and the patients allowed to drink a short time before lunch or in the afternoon. This prevents loading the stomach, and is of special importance in patients with atonic ptosis.

4. If the condition is more severe, or combined with ptosis of the stomach, the patients must stay in bed for two or three weeks. Many patients have their acid pains only when about or walking, never when lying down. This rule is further based on the frequency of latent ulcers which lurk behind the symptoms of hyperacidity.

The author also sometimes orders hot compresses in simple hyperacidity, if they give relief to the patient, but only twice daily for two hours. At night he substitutes cold compresses. Washing the stomach is indicated only if the hyperacidity arises on the basis of a catarrh. Then he rinses the empty stomach in the morning with 1:1000 solution of salicylic acid or 1:5000 solution of silver nitrate. The bowels must be carefully regulated.

If all these measures do not lead to recovery, operation is indicated. The manner and procedure of the latter depend on the condition found during operation. If an ulcer of the pylorus or duodenum or a scar is the cause of the hyperacidity, gastroenterostomy is the correct procedure, and, if possible, the pylorus should be closed. Perigastritic adhesions must be loosened, and gall-stones removed by cholecystotomy or cholecystectomy. If there is no anatomic lesion at all, the author advises gastroenterostomy, but without closing of the pylorus. The latter can be recommended only if violent pylorospasm is present. The patient must then go on for some time with the diet and drugs in the same manner as before operation, as the latter does not restore health of itself, but only establishes conditions favorable for internal treatment. Adolf Schmidt (Journal of the American Medical Association, February 7, 1914).

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Iodine Tincture, Use of, in Respiratory Catarrhal Conditions.—Having noticed the good effects of application of tincture of iodine to the chest in the treatment of catarrhs of the air passages, the author thought the benefit noted might be due, not to the absorption of the remedy, but to the disinfectant, detergent action of the inhaled fumes. The action, indeed, is most intense when the tincture is painted on the chest near the mouth or nose, and the author concluded, therefore, that the best effects could be obtained by having the patients inhale directly the fumes of the tincture of iodine. His clinical observations have proven the value of the method. Inhalation of the dry fumes of tincture of iodine is preferable to moist inhalations. The dry fumes penetrate deeper into the pulmonary air cells, leaving behind the alcoholic vapors, which are immediately taken up by the humidity of the air and eventually fixed to the mucous membranes of the respiratory organs.

In applying the measure, recently prepared tincture of iodine should be placed in a wide-mouthed bottle so that the patient's mouth and nose will not touch the glass. The inspirations, numbering from 4 to more than 8 at each sitting, must be more or less deep, according to the gravity of the case, and the inhalation repeated five or seven times a day. An ordinary cold will thus be broken up in one day, but if the case should be in the nature of a bronchial catarrh it will take four days to cure it. If the mucous membranes are covered with a thick mucous stratum, it is well to intensify the iodine treatment and assist expectoration by giving the usual remedies.

In children the treatment may be simplified by dropping the tincture of iodine on pieces of cotton laid on the pillow while the patient is sleeping. Staining of the pillow is avoided by placing a piece of oilcloth under

the cotton. G. Torri (Policlinico, No. 31, 1913; Denver Medical Times, March, 1914).

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Magnesium Sulphate and Glycerin in Local Infections.—The author came to use a mixture of saturated solution of magnesium sulphate and glycerin in equal proportions for the cure of infections, knowing that saturated magnesium sulphate was used in sprains and inflammations to allay pain and abate swelling, and that glycerin had been used for years in the form of tampons in pelvic troubles. He reasoned that a combination of the two drugs might reduce swelling, stimulate lymphatic circulation, and perhaps cause increased phagocytosis. He reports a series of 14 cases of wounds of various kinds, infected blisters, felon, and cellulitis in which the measure referred to was employed. In the latter condition the arm was packed in the hot solution from fingers to shoulders. All the infections were controlled in an unusually short time. E. M. Freese (New York Medical Journal, February 14, 1914).

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Pyorrhea Alveolaris, Treatment of.—Though many have claimed excellent results in this condition by purely dental treatment, a definitely curative treatment has yet to be described. Upon examination one finds that purulent pockets become established more or less deeply in the diseased tissue, in the sphacelated part where the nutrition is bad and where, in consequence, the elaboration of the antibodies against the infecting microbes is very feeble or even nil. It is against this condition that the vaccine treatment used by the authors is directed.

In the cases which they studied streptococci were found as the species which predominated. In several cases they were associated with *Staphylococcus aureus, S. albus* in another, or *S. citreus.* In 2 cases there was found an association of the streptococcus and of the *Bacillus pneumoniæ* of Friedländer, once with the *Micrococcus catarrhalis,* and twice with a pneumococcus.

A sensitized vaccine against the streptococcus, staphylococcus, pneumococcus, and bacillus of Friedländer was thereupon prepared. For *M. catarrhalis* a Wright vaccine was made. Vaccine injections were then made, either into the thigh or lumbar region. After two injections, when the antibodies began to take hold, a mechanical and dental treatment—Younger's—was begun. After from 4 to 5 injections, it was found impossible, either by microscopic examination or by cultures, to discern the presence of the bacteria which had originally been obtained. The teeth had become firm in their alveoli; the gums and mucous surfaces had a clean and healthy appearance. Three or four supplementary injections were, however, given. The authors have kept in touch with a number of cases for six months after treatment. These cases have shown no recurrence and seem to have been permanently cured. D. M. Bertrand and A. C. Valadier (New York Medical Journal, January 10, 1914).

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Retroversion, Operation for, When the Abdominal Cavity is Opened.—Alexander's operation for shortening the round ligament is the operation of

choice for retroversion of the uterus. But when a suprapubic abdominal incision must be made, it is often possible to minimize traumatism and save time by correcting the displacement through such an incision. Under these circumstances, operations upon the round ligaments have been found to be most satisfactory.

None of the methods recommended for intraperitoneal shortening of the ligaments, however, fulfills all requirements, and all of them give rise to one or more objectionable features. The author describes an operation free of these objections, as follows:—

Grasp the ligament near its exit from the internal inguinal ring and pull toward the median line until it is taut. Pass a slender twenty-day catgut thread through it about 1 cm. from the internal ring and again about 5 cm. from its uterine attachment and tie it. Sew the edges of the resulting loop of ligament so that it will form a double cord, and leave the end of the thread projecting beyond its free end. Separate the peritoneum freely from the abdominal wall at the lower end of the incision laterally as far as the internal inguinal ring. With the point of a pair of slightly curved hemostatic forceps puncture the peritoneum from without inward about 1 cm. mesially from the ring; grasp the thread and pull the loop through the puncture until all of the sutures are extraperitoneal. With a permanent suture attach the loop at a point about a centimeter from its base to the under surface of the abdominal wall as near the inner ring and as low down as possible without risk of puncturing the epigastric or femoral artery. The pulsating arteries are easily felt, and each step of the operation should be guided both by sight and touch. Twist the loop half-way round on its long axis and sew it with catgut along the abdominal wall toward the median line. Do the same on the opposite side with the other ligament and close the abdomen in the usual way. Introduce a small pessary to be worn for two or three months.

When the operation is done in this way the sutures are all extraperitoneal, the intraperitoneal relation of the parts is practically normal, and the traction of the ligament is toward the internal inguinal ring. An advantage of the method is that in case the permanent suture should gradually cut through the ligament the adherent subperitoneal connective tissue about the loop or cord would yield sufficiently to prevent the ligament being torn out of it, but would afford an elastic subperitoneal attachment that would still exert forward traction. It would afford better support than the peritoneal bands that sometimes result from abdominal fixation and would prevent complete failure of the operation.

Excepting the abdominal incision, there is in this procedure no cutting, and no dissolution of continuity in the tissues other than the blunt separation of the peritoneum from the abdominal wall over a very limited surface. H. T. Byford (Chicago Medical Recorder, January, 1914).

* * *

Stomach, Continuous Lavage of.—Introduction of a retention stomach tube through the nose, to keep a constant flow of fluid in and out of the stomach, is advised by the author as the best means available for combating acute atony of the stomach and

duodenojejunal occlusion, postoperative paralysis of the bowel and ileus from adhesions, or spastic contraction from peritonitic reflexes. The nose is first cocainized and a soft oiled stomach tube with a lumen of 8 or 11 mm. is worked through the nose down into the stomach. As soon as it reaches there the stomach content generally spurts from the tube spontaneously. The stomach can now be rinsed out if desired. A longer tube is then attached to it and carried to a receptacle. Fluids can be supplied by slow subcutaneous infusion, a drop at a time, of a warm isotonic salt solution, possibly with 4 per cent. of grape sugar. It is convenient to use both the stomach tube and the infusion on the left side, leaving the patient's right hand free. With the retention tube the mouth is left free and the patient can talk, swallow, and have his teeth brushed, while the method has a number of obvious advantages over the ordinary technique for lavage of the stomach. The author has known amounts up to 5 liters thus to be drained away. Westermann has applied the procedure to 15 patients, Kappis to 10, and the author himself to 9. The tube was left in place for four days in one of his cases. Kappis and Westermann found traces of the gastric mucosa sucked into the openings in the tube in 2 cases, and they advise keeping the outlet on a level with the bed to prevent aspiration. The author also advises a trial of the retention stomach tube in cases of vicious circle after gastroenterostomy. M. Grosser (Archiv für klinische Chirurgie, vol. ciii, No. 4, 1914).

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Tuberculous Laryngitis, Scarlet Red Treatment in.—The success of Davis and Deming in the treatment of gastric ulcers with scarlet red led Corning and the author to believe that there might be something of value in this dyestuff in the ulcerations of laryngeal tuberculosis. It was accordingly ordered for all such patients in a sanatorium. It was applied to all cases presenting laryngeal lesions, whether ulcerative or not. The best manner of use was found to be by direct application. The author now uses a preparation the base of which is equal parts of sesame oil and petrolatum, with a dye strength of 10 per cent. This is applied twice daily to the larynx. The drug is not at all irritating and the applications not distressing. No untoward symptoms have been observed.

The first and most surprising result obtained was a very prompt relief of pain. This was noted in every case in which pain had been present. In some the pain was entirely relieved, so that patients were able to eat and drink with comfort. In all cases but 2, both far advanced before treatment was instituted and dying very soon thereafter, ulcerations showed a tendency to heal. The general laryngeal congestion of several cases soon subsided, and the hoarseness improved. In a few patients presenting only infiltrations and edema, after a few weeks of this treatment with scarlet red the swelling grew markedly less. It is to be borne in mind that these were the most incipient cases and that they improved generally during this time. The local improvement, therefore, may have been as much due to the general betterment as to the local effect of the dye, but the result is reported because it is very possible that this drug may be shown to have

some selective action through the unbroken mucous membrane. Eugene E. Hinman (Albany Medical Annals, February, 1914).

* * *

Ununited Fracture, Treatment of.—Attention is called by the author to the remarkable effect of local injection of osmic acid in a case of ununited fracture of the leg. This fracture had obstinately refused to consolidate under the usual measures, applied for six months. Röntgenoscopy confirmed the lack of consolidation in both tibia and fibula. Then 0.02 c.c. of osmic acid in 1 per cent. solution was injected directly into the focus. There was not much pain or local reaction, but the temperature rose slightly. The injection was repeated three times in fifteen days and the fracture rapidly consolidated, so that the patient was discharged two weeks later. Experimenting on 12 rabbits confirmed the view that osmic acid has a decided stimulating action on the periosteum and bone-marrow. It probably does not start an actual process of ossification, but induces inflammation, which modifies local conditions and causes the cellular elements to hyperfunctionate. M. Segrè (Policlinico, January 25, 1914).

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Wounds and Infections, Treatment of.—The following summary of procedures serviceable in these conditions is presented by the author:—

Fresh Wounds.—A. Incised wounds: 1. Paint with iodine. 2. Shave dry. 3. Tie all bleeding points. 4. Remove foreign substances. 5. Suture all tendons and nerves. 6. Again apply iodine in and around the wound. 7. Suture wound. 8. Apply dry sterile dressing.

B. Lacerated wounds: 1, 2, 3, 4, 5, same as in *A*. 6. Cut away all damaged tissue. 7. Again apply iodine. 8. Suture wound.

C. Punctured wounds: 1, 2, same as in *A*. 3. Enlarge opening for drainage. 4. Insert rubber drain. 5. Alcohol dressing. 6. Tetanus antitoxin.

D. Gunshot or bullet wounds: 1, 2, same as in *A*. 3. If great amount of bleeding, enlarge opening and tie bleeding vessels. 4. If nerve injured, suture nerve. 5. Close wound. 6. Apply an alcohol dressing. 7. If neither 3 nor 4 has occurred, all that is necessary after 1 and 2 is to apply alcohol dressing. 8. Tetanus antitoxin.

Infections.—A. Inflammations with slight amount of serum exudation and characterized by redness, heat, swelling, pain, and loss of function. 1. Rest. 2. Elevation. 3. Hot, wet dressing.

B. Inflammations with great amount of serum exudation, but with slight tendency to necrosis: 1. Incision. 2. Place gauze in wound saturated with Chlumsky's solution. 3. Apply wet dressing; keep wet. 4. Remove gauze in twenty-four hours. 5. Insert rubber drain. 6. Apply wet dressing.

C. Inflammations with marked necrosis: 1. Incision. 2. Drainage. 3. Wet dressing. 4. After inflammation has receded use Durante's solution. 5. Dry dressing.

Solutions for Dressing Wounds.—Durante's solution: Iodine, 1 part; potassium iodide, 10 parts; guaiacol, 5 parts; glycerin, to make 100 parts.

Chlumsky's solution: Camphor, 60 parts; phenol, 30 parts; alcohol, 10 parts. A. E. Hoag (New York Medical Journal, January 17, 1914).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

In amenorrhea, relative or absolute, ovarian extract considered best remedy by author. *Bandler.* 91

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Angina Pectoris. TREATMENT. Concussion at level of seventh cervical vertebræ, together with hypodermic injection of 1/10 grain (0.006 Gm.) of pilocarpine, to increase vagus tone, gives relief more promptly than does morphine. *Jarvis.* 160

Ankylostomiasis. TREATMENT. Betanaphthol in 30-grain (2 Gm.) doses given the first thing every morning is likely to prove more effectual than eucalyptus or thymol. Starvation of patient during such treatment is unnecessary; in bad cases it may be harmful. *Keith.* 165

Arthritis, Chronic. TREATMENT. Injections of phenol-camphor used with benefit. Must be made only into joint, never into spongy bone. Formula: Phenol, 30; camphor, 10; alcohol, 30. Only 0.5 or 0.25 c.c. is injected at one point, except in streptococcic processes, where 2 c.c. are necessary. *Pohl.* 235

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing, exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* 55

Cancer. DIAGNOSIS. Marked diminution of the area of cardiac dullness in the recumbent posture, as determined by percussion, found in 87 per cent. of 111 cancerous cases and only 16 per cent. of 107 noncancerous cases. This sign may be present in cancerous cases that show no wasting. When the sign is present, diagnosis of carcinoma should be rejected only after careful consideration. In some cases the sign has appeared early enough to enable successful resection to be carried out. *Gordon.* 234

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Corneal Ulcer. TREATMENT. Bathing part with 1 per cent. ethyl hydrocupreine solution for one-half minute every hour, six hours first day and twelve on next, found rapidly effectual in a case of ulcus serpens with hypopyon from chronic dacryocystitis. Sac expressed and conjunctiva cleansed with boric acid before each treatment with ethyl hydrocupreine, which was dropped on the ulcer. Practically specific against pneumococcic infections. *Wiener.* 168

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solution. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delirium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* Page 110

Diabetes Mellitus. DIAGNOSIS. Frommer's test recommended for detection of small amounts of acetone. Treat about 10 c.c. of urine with 1 Gm. of sodium hydroxide in substance and without waiting for it to dissolve; add 10 or 12 drops of a 10 per cent. solution of salicylaldehyde in absolute alcohol. Heat to 70° C. In the presence of acetone, marked purple-red color develops at zone of contact with alkali. This test indicates presence of 0.000001 Gm. of acetone. Urine must be diluted so that its specific gravity is about 1.01. *Muhlberg.* 232

TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.,* of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often causing glycosuria to disappear. *Cornwall.* 110

Dysentery, Bacillary. TREATMENT. In acute form: (1) Rest and warm covering; (2) only small amounts of food at a time; (3) calomel at the outset; (4) acid drinks; (5) enemata of saline or soda solution or of methylene blue. In chronic form: (1) Rest; (2) enemata of 1:500 or 1:1000 silver nitrate, 0.25 to 0.5 per cent. tannic acid, 1:500 or 1:1000 thymol, 1 to 2 per cent. resorcinol or creolin, or enemata of gum arabic mixed with bismuth subgallate or iodoform; (3) phenyl salicylate, tannigen, ichthyol, or calomel internally; (4) serum treatment, 10 c.c. in mild cases, 10 c.c. twice at six- to ten- hour interval in medium cases, and 40 to 60 c.c. in severe cases, not exceeding 20 c.c. at a time when serum used daily; (5) appendicostomy or cecostomy with irrigation in severe cases. *Bassler.* 111

Dysmenorrhea. TREATMENT. Cocaine applied to tuberculum septi in nose and anterior portion of inferior turbinate on both sides, followed by application of trichloracetic acid over these spots, in 93 cases. Four applications made between periods. Cases with premenstrual headache, nausea, and colic at onset of flow—but without organic pelvic lesions—completely relieved. Of 81 cases sending subsequent reports, 48 had been cured and 14 improved. *Mayer.* 167

Atropine found very useful, except in cases with high blood-pressure, when pressure must be reduced and cause sought and removed. *Stolper.* 235

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* 11

In mild acute cases paint on lesions an aqueous solution of picric acid several times daily; in more severe cases apply wet dressings of the acid, held by facial mask. Prompt and gratifying results. In subacute and chronic types cure hastened by beginning treatment with two or three days' application of picric acid solution. *Wilcox.* 176

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Epilepsy. TREATMENT. Four patients with severe essential epilepsy treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic. Considerable benefit. Dose of fluid injected, 3 to 5 c.c. biweekly or weekly. Improvement striking both as to severity and frequency of attacks. In some, petit mal took place of grand mal. Greatest improvement noticed especially if injected fluid was taken from other patients during recurrent attacks, no matter how slight the latter. *Gordon.* 235

Epithelioma. TREATMENT. Concentrated sunlight, focused on growth with ordinary magnifying glass, found effectual. Useful where X-rays and radium not available. Invariably successful in obstinate recurrent ulcerative patches on face or nose. Focus sunlight on sore for ten or fifteen minutes at a sitting. If scab present, concentrate rays till burning is felt, then lengthen focus to cover wider area. Induce burning again every few minutes. Treat every day or two till scab easily removed, then apply a little cocaine and after three or four minutes apply rays so as almost to cauterize base of ulcer. Alternate with milder applications for fifteen minutes. Under milder treatments thereafter, at longer intervals, cure usually complete in three to six weeks. *Seelye.* 166

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

In facial erysipelas: Have beside bed bowl of boric acid solution in which ice is placed. Keeping cloths frequently moistened with the solution continuously on face effectually relieves pain and burning. Where leg or arm

involved: Wet dressings of boric acid or aluminum acetate. In migratory cases: Ichthyol may be applied or surfaces painted with picric acid solution. *Erdman.* Page 112

Pyramidon used in 20 cases with uniformly favorable results: Diaphoresis, antipyresis, sedation, fading of eruption, which ceases to spread, and improved general condition. Diuretic beverages also given. Locally, following ointment used: Phenolis, camphoræ pulveris, ana gr. xv (1 Gm.); adipis lanæ hydrosi, petrolati, ana ℥ss (15 Gm.). *Satre.* 167

Discomfort and pain more rapidly relieved by picric acid solution than other agents, and edema disappears promptly. *Wilcox.* 176

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ℥iiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

General Paralysis. TREATMENT. Remissions may be prolonged by suitable doses of tuberculin (1/1000 to 1/5000 mg. of tuberculin residue). *Jackson.* 236

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Report of cases improved by administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided among twenty days in each month. *Gaultier.* 90

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1) Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2) grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* 48

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made. *Wolff.* 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomenta-

tion applied for five or ten minutes twice, and followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* Page 50

Hemorrhage, Cerebral. TREATMENT. Venesection used with good results and recommended in cases of apoplexy in full-blooded patients with blood-pressure of 200 mm. or more. Amount of blood let in author's cases, 12 to 48 ounces. Where vein at elbow not easily found in stout persons, there are usually varicose veins in legs which can be opened. *MacFarlane.* 121

Hernia. TREATMENT. Inversion of hernia recommended in patients who take anesthetic poorly and maintain strong expiratory efforts, forcing viscera into sac under pressure. Primary union and cure of hernia in each of author's 7 cases thus dealt with. *Haynes.* 170

Herpes Labialis. TREATMENT. Picric acid solution causes rapid drying of lesion and tends to prevent extension. *Wilcox.* 176

Hodgkin's Disease. TREATMENT. Benzene, 5 minims (0.3 c.c.) three times daily at first, then increased to 10 minims (0.6 c.c.), caused marked regression of enlarged nodes, beginning two weeks after treatment begun, in a case previously treated unsuccessfully with X-rays. The 10-minim dose was continued for six weeks. *Lawson and Thomas.* 173

Hyperchlorhydria. TREATMENT. Cream diet considered useful. (See Ulcer, Gastric.) *Nichols.* 169

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Insanity. TREATMENT. Recovery in manic-depressive insanity may be hastened by stimulation of leucocytosis by injection of 1 c.c. of terebene subcutaneously in the flank. *Jackson.* 236

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intertrigo. TREATMENT. Paint picric acid solution on surfaces and separate them with thin layers of absorbent cotton. In the more severely infected cases wet dressings of picric acid. Prompt results. *Wilcox.* 176

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valuable for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Lumbago. TREATMENT. Salicyl compounds or a 10- or 20- grain (0.6 or 1.2 Gm.) dose of quinine at onset of condition useful. Rochelle salts, ½ to 1 dram (2 to 4 Gm.) every hour or two until urine alkaline and bowels freely moved, also valuable. "Walking the lumbago off" may succeed if free perspiration accompanies the exercise. Turkish bath in early stage safer and more effective. Later: Rest, dry cups locally, deep massage, faradic current, and, if salicylates fail, iodine, in vegetable protein combination. *Henry.* 175

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Gold and potassium cyanide injected intravenously in 12 cases. Single dose, 0.01 to 0.05 Gm. Results good. Course of 12 to 14 injections followed by interval of two to three weeks, after which another treatment given. Even in severe cases, therapeutic results better than with tuberculin and other measures. *Poór.* 236

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation, in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Ozena. TREATMENT. Use of sugar recommended. For first week or two surgeon should carry out treatment himself,

and precede sugar by removal of crusts from nose, softening them if necessary with hydrogen dioxide or sodium bicarbonate solution. Patient to use nasal syringe once daily. After crust removal, massage mucosa with cotton-tipped probe; then nostrils may be packed with ribbon gauze soaked in simple syrup, to be removed in twelve hours. Repeat this treatment on alternate days. After a fortnight patient can insufflate powdered sugar himself. *Harry.* Page 175

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.*, daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Vaccine treatment advised. First give polyvalent stock vaccine of pneumococcus and streptococcus, of each, 30 million, as soon as possible. Make sputum smears and cultures, blood-cultures in early cases, lung puncture in late ones, and prepare autogenous vaccine. If no definite response in twenty-four to forty-eight hours, repeat or preferably give autogenous vaccine. If still no response in thirty-six or forty-eight hours, double the dose. If there is response, as shown by improved clinical symptoms and signs, increased well-being, etc., defer reinoculation three days, or until the first symptoms of retrogression in general condition or physical signs occur. Maintain the dosage or increase it every two or three days until the patient entirely well. Generally about three doses are necessary. Average mortality with vaccine treatment only 5 to 10 per cent. Convalescence shortened and danger of complications lessened. In severe cases also give 20 to 30 grains of sodium citrate every two or three hours. *Craig.* 238

Poliomyelitis, Acute. DIAGNOSIS. Preparalytic symptom: A peculiar, twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to somewhat less than a minute. Usually affects part or whole of one or more limbs, face, or jaw, but sometimes whole body. Duration of spells short at first. Often accompanied by a cry similar to hydrocephalic, or by brief period of unconsciousness. *Colliver.* 177

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Low nitrogen diet found to have very favorable influence upon psoriasis eruption, especially when extensive. Severe cases improve under such a diet almost to the point of disappearance of the eruption. *Schamberg, Kolmer, Ringer, and Raiziss.* 178

Application of picric acid solution brings immediate and constant relief from itching. *Wilcox.* 176

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* 53

Puerperal Sepsis. TREATMENT. Fixation abscess recommended in this and other severe infectious states, including pneumonia, appendicitis, typhoid fever, etc., whenever condition seems to be taking a turn for the worse. Inject 2 c.c. of pure oil of turpentine under gluteal skin. When abscess forms, evacuate through small incision (do not drain) and apply Bier cups twice daily. Excellent results in 18 cases. *De Lostalot.* 168

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disappeared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* 55

Rachitis. TREATMENT. Pituitary extract given to 16 young children with rickets, and effects compared with controls. After a few weeks of pituitary, the children were able to stand and began to walk; fontanelles began to close and growth of teeth was considerably accelerated. Osseous tenderness gradually diminished, weight was gained, and musculature became firmer. *Weiss.* 218

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intra-

muscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* Page 91

Ringworm. TREATMENT. Body ringworm more easily controlled by painting on picric acid solution than by usual antiseptic ointment. *Wilcox.* 176

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Syphilis. DIAGNOSIS. Luetin test valuable as diagnostic measure in tertiary and latent stages of syphilis, indicating a state of hypersensitiveness to spirochetal proteins induced by a period of cessation of introduction of these proteins previous to the test. Provocative injection of salvarsan, followed by both Wassermann and luetin tests, suggested to ascertain whether treatment has been curative in a given case. *Foster.* 179

TREATMENT. Epinephrin, 15 to 20 drops of 1:1000 solution in a little water by mouth, advised ten to fifteen minutes before injection of neosalvarsan, to prevent "nitritoid" symptoms, arising in some patients from the latter, *e.g.,* facial congestion, tingling in throat, nausea, and vomiting. *Galliot.* 212

Tonsillitis, Ulcerative. TREATMENT. After thoroughly washing surfaces and crypts, apply 10 per cent. silver nitrate solution over ulcerated surface and carry down into crypts as well. Then dust thymol iodide with powder blower over gland and throw it into diseased lacunæ. Where tonsils seat of recurring inflammation, but patient objects to removal, use electric cautery. Selecting 3 or 4 crypts at a time, apply 10 per cent. cocaine solution to interior of each with fine-pointed cotton applicator. When anesthesia sufficient, introduce curved electrode into each crypt and turn on sufficient current to produce a white heat before electrode removed. Patients thus treated are freed from further attacks. *Bishop.* 241

Tracheobronchial Glandular Enlargement. DIAGNOSIS. Percussion of thoracic vertebræ, especially those above level of inferior scapular angles, affords tonal changes of clinical value in this condition; these must always be correlated, however, with mural signs in the individual case. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect vertebral percussion sound less, and oftener produce dullness than hyperresonance. *Da Costa, Jr.* 180

Tuberculosis, Articular. TREATMENT. X-rays found useful in bone and joint tuberculosis. Aluminum or thick leather shield to be used. Treatment not to be employed in children less than 5 years old, and in older children epiphyses should preferably be avoided. Best effects noted in cases with sinuses and secondary infection. Part exposed from all sides to an erythema-producing dose; three weeks then allowed to elapse before repetition. Joints healing under the rays show but little limitation of motion. Abscesses with skin about to yield should not be rayed, owing to danger of necrosis. *V. Schede.* 165

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

TREATMENT. Frequency of gastric atony and dilatation, with resulting digestive symptoms and secondary toxic manifestations (aches and pains in chest and right hypochondrium, morning depression, insomnia, hepatic weight, vertigo, chilliness an hour after meals, fleeting edema, etc.), in pulmonary tuberculosis pointed out. Treatment: (1) Support to stomach and abdomen by Rose belt of plaster or moleskin, followed, upon improvement, by supporting belt to be worn continuously and later in daytime only. (2) No liquids with meals or for two to two and one-half hours after. (3) Lunch to be light. (4) Recumbency, with attempt to sleep for one-half to one hour after each meal. (5) No alcohol or fresh bread. (6) Medicinal treatment: Tr. nucis vomicæ, acidi hydrochlorici dil., āā f℥ss (15 c.c.); glyceriti pepsini, f℥iss [illegible] c.c.); aq. menthæ pip., q. s. ad f℥iij (90 c.c.). Teaspoonful in ½ glassful of water after meals. If much flatulence, add chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until relieved. (7) Cold shower or sponge baths, with needle bath to abdomen, followed by brisk rub, each morning. (8) Where mucous passages and flatus: Turkish towels, wrung out in hot water, to be applied to abdomen for one-half hour after meals. (9) Thorough mastication of food and abstention from worrying at meals. (10) Fats to be avoided at first. *F. N. Robinson.* 95

Measures to overcome fever described: (1) Where prolonged fever drains on patient's strength, pyramidon is drug to be preferred—5 grains (0.3 Gm.) in cachet at night, or, if

necessary, three times a day. In neurotics bromides sometimes efficacious. (2) Rest in recumbency to be insisted on until temperature does not rise above 99° in men or 99.2° in women, when patient may sit in chair for two hours, then recline on couch, in open air if possible. Exercise then gradually increased. (3) Where severe cough, sedative mixture tends to prevent fever from the exertion and autoinoculation. (4) Where rest and drugs fail, cautious use of tuberculin (T. R. or B. E.), beginning with only $\frac{1}{100000}$ mg., exerts antipyretic action, though often only for short periods. Tuberculin acts best in cases free from fever while at rest, but febrile when exercise taken. *Wethered.* Page 120

Value of auscultation at acromion process in apical tuberculosis emphasized; it amplifies all auscultatory signs over apices. Of 28 cases in first stage, all showed acromial breathing. *Magida.* 239

Ulcer, Gastric DIAGNOSIS. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* 114

TREATMENT. Cream diet used with success in 26 cases. One quart (4 glasses) a day yields 1800 calories. To this may be added 600 c.c. of milk or 6 slices of bread or 5 tablespoonfuls of oatmeal gruel or 3 eggs. Cream causes inhibition of gastric secretion. If not tolerated in full strength, it may be diluted with equal or greater amount of milk. Ice-cream a useful variant. Some marked cases progressed to good recovery in two or three months under cream diet. Method adapted for bed or ambulant treatment. Also useful as prophylactic against recurrence of ulcer. *Nichols.* 169

Ulcers. TREATMENT. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

Urticaria. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Vomiting. TREATMENT. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Vomiting of Pregnancy. TREATMENT. Apomorphine, $\frac{1}{36}$ grain (0.0018 Gm.) in a teaspoonful of water, found effectual in a severe case; likewise in other cases of vomiting or nausea. *Field.* 182

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1 : 1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received $\frac{1}{3}$ c.c. as initial dose and $\frac{2}{3}$ c.c. four days later; others, $\frac{1}{2}$ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a bronchopneumonia as complication, a mixed vaccine should be used. *Davidson.* 118

Silver nitrate in 2 per cent. solution applied to throat in 95 early cases to prevent spread of infection downward from pharynx. Useful results in 84 instances. Mucus secretion prevented and coughing spells due to irritation by secretion minimized. Silver solution applied every day at first; later, and in older children throughout, on alternate days. *Ochsenius.* 182

Wounds. TREATMENT. Stream of air from ordinary electric fan or register found useful in drying and promoting healing in large wounds, obstinate leg ulcers, and discharging eczema. *Heisler.* 182

Book Reviews

AN INTRODUCTION TO THE HISTORY OF MEDICINE. By Fielding H. Garrison, A.B., M.D., Principal Assistant Librarian, Surgeon-General's Office, Washington, D. C. Octavo of 763 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1914.

Doctor Garrison has rendered a veritable service to the medical profession by utilizing the unequaled facilities afforded by the Surgeon General's Library of Washington to prepare so excellent and comprehensive a history of medicine. While claiming to furnish but an outline, he gives us in reality an analytic study of the "best that has been thought and said" in our chosen field from the remotest period to the present. In the seven hundred and thirty-five pages of closely printed text of which the work consists, we have thus unfolded in turn the various forms of ancient and primitive medicine, Egyptian, Sumerian, Oriental, and Greek, the latter comprising the pre-Hippocratean era, the classic and the Greco-Roman periods. Then follow in chronologic order the Mohammedan, Jewish, and Medieval periods, that of Renaissance, of revival of learning, leading up to

the age of individual scientific endeavor and to that of theories and systems. The nineteenth and twentieth centuries mark the beginning and elaboration of organized and truly scientific medicine—more fruitful in its results than were the centuries that had preceded them. The work is copiously illustrated and the highest grade of calendered paper used. The many photographs, daguerreotypes, and vignettes reproduced stand out with utmost clearness. The author and publishers are to be congratulated on the production of so useful a work.

THE DOCTOR IN COURT. By Edwin Valentine Mitchell, LL.B., of the Massachusetts Bar. 152 Pages. New York: Rebman Company, 1913. Cloth, $1.00.

The author of this book describes his work as "an attempt to put briefly and in high relief the general principles of law relating to the medical profession, and the reasons for these principles." The book is undoubtedly one calculated to be of much value to the practitioner, whose knowledge of legal requirements is often imperfect. It will assist him in foreseeing and forestalling unpleasant eventualities that may grow out of his relations with his patients. The subjects taken up in succession in the book are: professional evidence, the proper attitude for the physician called to court being summarized; the contract of the profession, under which, as a chapter heading, are considered contracts of different kinds, the degree of professional learning and skill which the physician is required to bring to the aid and relief of his patients, his following established practice, etc.; civil responsibility of the profession; remuneration; confidential communications; the criminal responsibility of the profession, and qualifications. It seems doubtful if any more useful information on various aspects of the physician's relationship to the courts could possibly be given in the space afforded by the 140-odd pages of this little book. The physician or surgeon called to testify will find the work extremely useful, and he who has not yet been called is not likely to regret being forearmed by its perusal.

THE PRACTICE OF PEDIATRICS. By Charles Gilmore Kerley, M.D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Octavo of 878 Pages, with 139 Illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $6.00, net; Half-morocco, $7.50, net.

Of good, comprehensive textbooks on pediatrics recently published there have been relatively few, when one compares their number with that of works on most of the other specialties. While not precisely filling an actual want, Dr. Kerley's book forms an excellent addition to those already available. The work appropriately begins with a discussion of infant feeding and of the disorders of nutrition, including marasmus, scurvy, rickets, and "the delicate child." These subjects occupy 140 pages. The second section is on examination and diagnosis in children in general, with the essentials in the care of acute illness. Successive sections are then devoted to diseases of the newborn (premature infants, cephalhematoma, icterus, asphyxia, atelectasis, tetanus, hemorrhagic affections, etc.); diseases of the mouth and esophagus, of the stomach, intestines, and peritoneum, of the rectum and anus, of the spleen and liver; diseases of the respiratory tract; diseases of the heart and the blood; diseases of the glandular system; diseases of the urogenital system; nervous disorders; diseases of the skin; diseases of the ear; the transmissible diseases, and unclassified diseases, such as rheumatism, cyclic vomiting, or diarrhea; rheumatoid arthritis; cretinism, and diabetes. Another chapter is devoted to miscellaneous subjects, such as heredity and environment, obscure elevations of temperature, anesthetics, obesity, the hernias, etc. The next is devoted to vaccination, out-of-door life, instructions for the summer, and the swallowing of foreign bodies. Finally, three sections are devoted to a description of various special therapeutic measures, such as counterirritation, hydrotherapy, stomach washing, and gavage; to the gymnastic therapeutics appropriate in flat chest, kyphosis, scoliosis, empyema, anterior poliomyelitis, etc., and to a table of drugs, with their uses and dosage. Throughout the book the author's experiences in the treatment of the various conditions discussed are recounted, illustrative cases in small type being interspersed. Under chorea the author states that his results have been strikingly good upon treating every case as though the condition present were rheumatism. On page 439 are illustrations of a case of chronic nephritis with anasarca much improved by Edebohls's operation. In the treatment of pneumonia the author particularly recommends the use of strophanthus where the pulse is very rapid; where, on the other hand, the pulse is irregular and intermittent, with reduced volume, strychnine is the remedy advised, and, where the skin circulation is deficient, nitroglycerin. Alcohol is used only when strychnine and strophanthus fail. On the whole, the work may be said to be concise, complete, and well ordered, and it cannot fail to be of value to the practitioner.

THE PATHOGENESIS OF SALVARSAN FATALITIES. By Sanitäts-Rat Dr. Wilhelm Wechselmann, Directing Physician of the Dermatology Department, Rudolph Virchow Hos-

pital, in Berlin. Authorized Translation by Clarence Martin, M.D., First Lieut. M. R. C., U. S. Army; Late Clinical Assistant St. Peter's Hospital for Stone and Other Urinary Diseases, London; Member Association Military Surgeons, Berlin Urological Society, etc. 143 Pages. St. Louis: Fleming-Smith Company, 1913. Cloth, $1.50.

The German edition of this work was reviewed in the June, 1913, issue of the MONTHLY CYCLOPEDIA, and mention was made at that time of the fact that one of the conclusions drawn by Dr. Wechselmann from his collective study was that simultaneous salvarsan and intensive mercurial treatment is attended with danger. This is a conclusion which recent experiences do not seem to substantiate, as the two remedies are now frequently "pushed" simultaneously. The author's advice carefully to watch the urine after salvarsan has been given, however, is a recommendation worthy of widespread notice, faulty elimination having undoubtedly been associated with some of the lamentable results reported in isolated cases from the use of salvarsan. While such cases are now growing fewer, Wechselmann's compilation of the histories of the earlier cases of salvarsan death constitutes a valuable contribution, which is likely to prove of enduring interest.

THE INTERVERTEBRAL FORAMEN. By Harold Swanberg, Member of the American Association for the Advancement of Science. With an Introductory Note by Harris E. Santee, A.M., Ph.D., M.D. 101 Pages, with 16 Plates. Chicago: Chicago Scientific Publishing Co., 1914. Cloth, $3.00.

This is a monograph upon the anatomy of the intervertebral foramina, the right first dorsal intervertebral foramen of a cat being selected for special, detailed study. From the adjoining vertebræ sixty sagittal sections were cut and subjected to careful investigation, both grossly and microscopically. Having failed in a careful search to find any literature on the intervertebral foramen, the author is doubtless justified in claiming that the work contains the first microphotographs and scientific description of such a foramen that has ever been published. Of special interest is the study of the relations of the first dorsal nerve to the foramen through which it passes. The author's study bears directly on the question whether compression of the spinal nerves at their passage through the foramina is, under abnormal conditions, likely to occur. This is, of course, a question of greater significance to the osteopath than the regular physician. From the author's studies it appears that it is an extremely rare occurrence that there should not be ample space for the spinal nerve to come through without compression by surrounding structures, even where the vertical diameter of the foramen is narrowed by reason of complete atrophy of the intervertebral discs.

The General Field

Conducted by A. G. CRANDALL

Sanitary Drinking Cups for Horses

The Women's S. P. C. A. of Philadelphia proposes to do away with the common drinking bucket for horses at their stands. Each driver must carry an individual bucket to water his horses, or, to be consistent, two buckets for two horses.

This is a great modern improvement and foreshadows important future developments along this line among the domestic animals.

It is certainly not considerate to require two cats to drink milk out of the same dish, and when one dog has a bone carefully stored away no other dog should be allowed to gnaw it.

The kind, benevolent old ladies who have provided by legacy for the erection of drinking founts for animals showed commendable motives, but evidently a very poor knowledge of sanitary science. These beautifully carved marble and granite bowls to be observed in numerous cities and towns will, of course, have to be removed in order to keep step with the rapid advances of the twentieth century.

* * *

The Dangerous Manicure Girl

At a recent convention of the Medical Society of the State of New York, a prominent physician charged the professional manicurist with being grossly ignorant of bacteriology. He says he knows of over a hundred cases of felons and various other forms of affection of the hand which he is able to trace directly to the careless use of manicure instruments.

The manicure girl has been variously criticised before. She has been accused of possessing an unusual degree of hypnotic influence, and her tips have long been the envy of other seekers of gratuities.

It will, however, be a little hard for many masculine patrons to accept so sweeping a statement as the one above. Perhaps a State Board Examination will have to be established in order to meet this situation.

* * *

Milk Powder

It is now proposed to solve a great problem by importing milk powder from Europe.

Presumably the milk powder will be guaranteed free from germs.

In order to bring this matter to a strictly scientific basis, there should also be a cream powder, thus enabling the hygienic household to provide itself with milk and cream, according to whatever formula may best suit their tastes or pocketbooks.

It is easy to imagine the clamor of the average child for a scientific combination of distilled water with a proper percentage of milk and cream powder, all positively germproof.

After having been suitably nourished in this manner, the baby should be then placed in a sterilized cage, absolutely dustproof, with a system

of sterilized ventilation. Under this benign regimen the child of eugenic parents ought later on to make some stir in the world.

* * *

Perversion of the Useful

Only a short time ago two traveling men were discovered in a strange city suffering from the effects of an overdose of heroin, with one fatality as a consequence. This will, no doubt, add to the clamor against the use of heroin in any form whatever, as a certain number of dope seekers seem to have centralized upon heroin as notably capable of producing the desired kick.

The therapeutic uses of heroin, like cocaine, are undisputed, and it is not likely that the mania possessed by certain individuals of mental instability will materially affect the professional attitude toward this product.

It is a question, however, whether such preparations might not be better dispensed directly by the physician rather than by means of a written prescription, as in that way the name of the medicinal substance could be kept in the background.

* * *

A Sad Waste of Timber

Someone who is fond of figures has computed that about four acres of heavy spruce timber are required to produce one issue of the Sunday newspapers.

An enormous amount of print paper has also been consumed in the past few months in describing the mental anguish of the unemployed. We believe that much of this sympathy is misdirected, and that spruce timber might be better saved for other purposes.

Anyone familiar with the sparsely settled rural districts where human nature can be estimated at its real, instead of sentimental, value is always impressed with the remarkable improvidence of a certain element; they have no ambition to accumulate anything to provide for some future stringency, and will not work except in cases of dire necessity. But these people, it must be understood, are in many cases merely shiftless, while in the city slums similar types of individuals degenerate into something worse.

All schemes of charity should include a system whereby the recipients should earn what they receive. This should especially apply to the bread line. Of course, physical debility provides the exception.

* * *

Automobiles and Extravagance

Some pessimistic student of statistics draws mournful conclusions from an estimate that there are a million automobiles in the United States, and that the year 1914 will see 400,000 more added to the number. He concludes that this is an era of extravagance, and that we are in a very bad way.

General figures are usually misleading. It is more than likely that the above estimates are excessive, and that a large percentage of the owners are simply diverting to automobiles what they would spend for other pleasures perhaps less wholesome.

Then there is another item to be considered in this connection. The married couples of the United States

can be roughly divided into two classes,—those who have children and those who have automobiles. When the childless couple gets to thinking the matter over and decides to buy an automobile, it provides some consolation for the lack of other advantages, and enables them to dispose of some of their financial surplus which in the due course of events would otherwise be inherited by scheming relatives.

* * *

The Rigid Hygiene of the Canal Zone

One of the contributing causes for the remarkable healthfulness of the Canal Zone is reported to be the ordinance which makes it a misdemeanor for any householder to have mosquito larvæ on his premises. There would certainly be some protest if such an ordinance were to be instituted in the States.

It is one of the glorious rights of the American freeholder to maintain as many nuisances on his property as he chooses. Mosquitoes, far from being regarded as preventable pests, are usually looked upon as a seasonable disturbance which must be endured with as much patience as possible. The fly is swatted and food products screened from insects largely as the spirit moves.

The marvelous benefit resulting from a régime of strict hygiene at the Canal Zone should be a greater object to Americans than the Canal itself.

* * *

A Fortunate Clergyman

A clergyman having encountered some hostility on the part of his congregation was sympathetically advised to proceed cautiously lest, together with his wife and young children, he incur financial hardships through the loss of his salary. The clergyman assured his friend that he was entirely optimistic so far as the financial outlook was concerned, as in early life he had fortunately learned the carpenter's trade.

Only a slight knowledge of the financial benefits conferred upon the average clergyman is necessary to show what an advantage it must be for a clergyman to know a good trade.

The richest country on the globe pays starvation salaries to its clergymen and teachers. In the good times coming when the present era of rawness has been succeeded by a period of more reflection, these conditions will undoubtedly be remedied, but at present the wages paid to these faithful public servants who have so much to do with shaping our future destinies are little short of a disgrace.

* * *

The Great Specific

A contributor to the United States Naval Medical Bulletin presents a picture of life in certain regions of Brazil which is not likely to produce a desire to migrate to that country. He tells of a Spanish laborer who was attacked with cerebral malaria resulting in convulsions followed by collapse, from which he was thought to be dying. The writer states that as a result of heroic doses of quinine administered intramuscularly, and aggregating 135 grains in twenty-four hours, the patient recovered.

It is said that most of the hardy pioneers who settled in the central sertions of the United States were accustomed to cease from their labors each alternate day because of the

regular chill and succeeding fever. Some of them developed a great fondness for quinine, but evidently they never employed this remedy according to modern methods, as they could not have had the means to purchase it on the wholesale plan which a modern system of therapeutics would suggest.

The specific action of quinine is one foundation stone which has not as yet been undermined by dissenters of any medical creed.

* * *

Skepticism Blocks the Way

If certain enthusiasts could have their way, vegetarianism would be the only logical solution of the dietary problem for a large number of people.

A warm advocate of extreme measures in New York State urges the application of the tuberculin test to all cattle at the earliest possible date.

The prospects of carrying out this program are extremely remote.

The numerous scandals which have been associated with the testing of cattle in various localities have prejudiced all classes of people against this highly scientific, but thus far impractical, prophylactic measure.

It is impossible for the average layman to understand why State officials should condemn the $200 registered cow, allowing the owner $35, and then pass the animal along alive to some State herd; or if slaughtered, permit the meat to be disposed of by the State at a price considerably in excess of the amount allowed the farmer.

The supply of beef animals is steadily decreasing irrespective of sanitary regulations, and with the decline in hog raising, due to cholera, there is a probability of a large increase in the imports of cold-storage meats from countries where the sanitary regulations are certainly not likely to be any more stringent than in the United States.

What is needed is a very general line of education that will make clear to the average farmer, dealer, and legislator, whatever real dangers may actually exist from the transmission of tuberculosis from apparently healthy cattle. At present they are very skeptical.

* * *

The Slandered Liver

Taking their cue from the English novelist of an earlier generation, accustomed to picture the retired English officer of long service in India as the irascible possessor of a damaged liver, it became the fashion to attribute nearly all the depravity of human nature to the patient and long-suffering liver.

Time, which brings revenge as well as justification, has refuted this slander, and the human liver is now regarded as possessing most of the Christian attributes of patience and charity.

It is probably true, however, that the liver has a pretty strenuous time, and it is for this reason that the advocates of the starvation cure have one fairly good argument on their side. By their system the liver is enabled to take a vacation, which, in a great majority of instances, is a great relief.

The science of nutrition is as yet a tremendous mystery to a great number of people who know quite a good deal about many other subjects, but who in matters of diet are blind leaders of other blind people, to whom they are always ready to impart a great deal of advice, most of which is of very bad quality.

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Department on the Internal Secretions

Original Articles and Summaries of Selected Articles

APPENDICITIS AND HYPOTHYROIDISM.*

By E. HERTOGHE, M.D.,
ANTWERP, BELGIUM.

MANY practitioners refuse to countenance the multiplicity of symptoms ascribed by some to thyroid insufficiency. Others consider thyroid insufficiency a pathologic rarity. All this is erroneous and disastrous from the standpoint of practice.

As an aid in thyroid diagnosis and treatment, the author has outlined for his own use the following simple and readily applied theory: The thyroid secretion presides over the elaboration of the various protein systems of the body. Without it, the muscular, nervous, glandular, connective tissue, or osseous cell could not attain the perfection indispensable to its proper functioning. This is shown in the arrest of growth in hypothyroid children and its resumption upon ingestion of thyroid products. The thyroid also presides over the disintegration of the worn-out and useless cell, and hastens the transformation of nitrogenous wastes, directing them toward the urea molecule for elimination with the urine. That this is true is shown by the rapid disappearance of the tissue infiltration caused by these wastes in those with thyroid insufficiency under the influence of a few doses of thyroidin, and the simultaneous enormous increase in the output of urea. From the above it is clear that the effects of hypothyroidism involve the entire organism.

The extreme vulnerability of the thyroid gland has often been referred to. In the child it staggers under the burden of bodily growth and in the

* Summary of article in Bulletin de l'Académie Royale de Médecine de Belgique, January 31, 1914.

adult female, that of menstruation, gestation, and lactation. Few individuals do not suffer, at least in small degree, from thyroid weakness. Few persons do not lose weight, like the frankly myxedematous, when given thyroidin.

The author maintains that thyroid insufficiency predisposes to both enlargement of the tonsils and appendicitis. The first of these associations had already previously been pointed out and supported with evidence by himself and others. The association of appendicitis with thyroid insufficiency is supported by his recent observations on a series of individuals presenting signs of thyroid insufficiency. In a large majority of these tenderness in the ileocecal region was found present. While not all these individuals can be expected to develop acute attacks of appendicitis with perforation, gangrene, and peritonitis, no one can guarantee that such a change from chronic to acute appendicitis will not take place in any given case. The author considers, in fact, that a combination of hypothyroidism with ileocecal tenderness indicates an exploratory operation.

In the last year the author has performed 126 appendectomies, of which 90 were for chronic appendicitis. These 90 patients were operated on merely because of the coexistence of hypothyroidism with ileocecal tenderness, and in not a single instance did the author subsequently feel that operation had been useless. The pathologic condition found related, in the first place, to the cecum, which was generally fixed deeply in the iliac fossa by weak adhesions, and often markedly vascularized and congested. These adhesions ascended almost imperceptibly on the anterior surface of the cecum in the form of hyaline, transparent veils. In the more advanced cases they covered and buried the appendix, fastening it either to the cecum itself or to the ileal mesentery, and, in addition, passed upward toward the hepatic flexure of the colon. In the adult these hyaline veils become thicker and vascular, and practically become bands which interfere with the passage of the feces in the large bowel.

The appendix in these cases, especially in children, is long, large, and fleshy. It is twisted on itself around its mesentery, or makes an abrupt turn on itself, forming a hook. It is generally filled with fecal material, either continuous or aggregated in coproliths. In the incipient cases the appendix is free and movable, but later it is progressively immobilized by the irresistible network of hyaline veils. Microscopically, it shows no peritoneal involvement as long as it remains free; the mucous membrane is normal and the lymphoid aggregations not unusually large. The starting-point of actual acute inflammation is probably the accumulation of fecal material in its lumen.

The essential points in the practical application of the knowledge of this relationship of hypothyroidism to appendix disease are: to be aware of the principal stigmata of the former, and to look regularly for ileocecal tenderness. Two cases are described to illustrate the author's methods:—

Case I was that of a married, childless woman of 32 years. In the last ten years her health had become impaired and she had been to many physicians and clinics, where her blood, urine, and gastric contents had been examined. She complained especially of digestive disturbance; yet the examinations had revealed neither cancer

nor any other grave organic change in the stomach. There was much abdominal pain, but this passed from one area to another. Constipation was a predominant symptom. Two years before, the uterus had been curetted for hemorrhagic fungous endometritis. In addition to the abdominal symptoms, the patient presented peculiar phenomena, apparently arising from a temporary and rapid toxic action on the nervous system. Suddenly, in the course of some outing begun in complete possession of her strength, she would become unable to go a step farther, and stand as though rooted to the spot by irresistible fatigue. Though naturally bright and spirited, she became depressed at times, without apparent cause. Her mental attitude was unstable, and the word neurasthenia had been pronounced by attending physicians, the patient finding therein a warrant of permanent invalidity on her part and losing all hope of recovery. One day, she was suddenly stricken with complete blindness; vision returned, however, half an hour later, after massage of the temples had been applied.

This patient's hair was long, but entirely white, and this, in one so young, suggested to the author hypothyroidism. Constipation, frequent headaches, occipital neuralgia, vertigo, tinnitus, and cold hands and feet were complained of. The patient had periods of chilliness in the evening—a pathognomonic sign, in the author's experience. Spells of marked drowsiness, interrupted by nightmare phenomena, were also present, together with rheumatoid pains all over the body, and venous varices unaccountable at the patient's age. The memory failed at times. All this was strongly suggestive of thyroid inadequacy. With the hand on the cecal region, the patient being recumbent, tenderness in this area was elicited, much to her surprise, no spontaneous pain having been felt there previously. Tenderness in the region of the right kidney was also present.

Hypothyroidism and chronic appendicitis were diagnosticated on the basis of the above facts, and early operation advised. Laxative and appropriate glandular remedies were prescribed in the mean time. Three days later, the patient went out of town by reason of an urgent family matter, and the same evening was seized with violent abdominal pain and high fever, the temperature rising next day to 40.5° C. (104.9° F.). The patient was brought back to town and at once operated. Upon opening the abdomen, turbid fluid welled up. The cecum was purplish, and the appendix fixed to the kidney by its distal extremity. The appendix was divided at its cecal origin, thus liberating the cecum. The appendix was distended with pus to the size of a child's intestine, and traction upon it resulted in the bursting of a pararenal abscess formed at the point where the tip of the appendix had become anchored to the kidney. The cavity was carefully drained, and the patient promptly recovered.

It was the hypothyroidism in this case, the author points out, which had led him to diagnosticate appendicitis before the acute phenomena appeared.

Case II was that of a pale and decidedly puny boy of 12, in whom the visual fields had been getting progressively smaller, and central vision was so reduced that the boy bumped into furniture, etc. The patient's grandfather had had myxedema. The frequent hereditary transmission of thyroid insufficiency led the author to think of such a condition in this patient. Appendiceal tenderness was noted. Consent to operate was given, and upon intervention the latter was found to have been not only justified, but carried out just in time. The child quickly recovered, and gained in strength and stature. Seven weeks after the operation the visual field was found larger, and in eight months had increased tenfold. Ten weeks after this, however, a slight diminution was noted, which the author looks upon as an expression of renewed thyroid insufficiency.

In this case, as in the first, knowledge of the presence of hypothyroidism was of diagnostic value. It is an established fact that the ocular lesions of myxedema frequently find expression in contraction of the visual field. Even

if myxedema had not been known to exist in this patient's family antecedents, the diagnosis would have at once been directed toward probable hypothyroidism, and consequently toward a possible chronic appendicitis.

THYMIC SYNDROMES.*

By L. MOREL, M.D.,

PARIS, FRANCE.

Experimental Thymiprive Cachexia and Congenital Thymic Idiocy.—One reads frequently that the effects of experimental thymectomy are uncertain and inconclusive. This is decidedly a mistake. When the thymus is *completely* extirpated as soon as practicable after birth, in carnivorous or omnivorous animals, somatic disturbances (cachexia thymipriva), slowly evolving toward death, are regularly observed. This has been clearly established by the experiments of K. Basch (1906), Klose and Vogt (1910), Morel (1911), Matti (1912), and Lampé (1913). Thus in dogs, four months after thymectomy, characteristic bony deformities appear. The anterior limbs curve inward and appear too short. The posterior, likewise bent and arched, appear too long. The cranium is large, flat, and short. Toward the fifth month, the animal loses weight, and becomes somnolent, sad, and cachectic. After this there is gradual progression to a stage of coma, in which the animal succumbs about twelve to eighteen months after the thymectomy. A remarkable peculiarity of the thymiprive state is the existence of mental disturbances, which appear about the fifth or sixth month. With its facial features completely relaxed the dog appears idiotic and crushed. It is slow in hearing and understanding the human voice calling it, in realizing the meaning of a welcoming or threatening gesture, and in recognizing its food and sleeping place. It eats with avidity, and apparently without distinction, such articles as meat, wood, corks, and cotton. It loses the capacity of orientation, loses itself in the kennel and bumps against evident obstacles. Finally, it exhibits various perversions, such as gnawing at dung, its foot, its penis, etc. In brief, thymiprive dogs show no special proclivities or desires; they are passive, apathetic, indifferent to everything, even to hunger (though they eat incessantly when food is presented). Psychic deterioration thus in them parallels somatic deterioration.

Such experimental production of a type of idiocy through suppression of the thymus in animals with intact thyroids is not without significance when it is known that 75 per cent. of idiotic children with normal thyroids, meninges, and nerve centers possess no thymus. Thus at Bicêtre, from 1890 to 1903, autopsies of 408 non-myxedematous idiots ranging in age mostly from 1 to 5 years—none being above 15 years—showed the thymus present only in

* Summary of article in Paris médical, January 17, 1914.

104 instances. While it has been generally stated that, in idiots, involution of the thymus is more rapid than in the normal child and that the thymus underwent involution because the individual was an idiot, it seems not unreasonable to believe, in view of experimental thymiprive idiocy, that congenital absence of the thymus is actually the cause of the idiocy. Lange and Dicker in 1911 had under observation a child 7 months old with wholly inexplicable, complete idiocy; the child dying, autopsy showed a very small thymus (1.5 Gm. instead of the normal 6 to 7 Gm.). At Garrè's clinic in 1912 there was noted the case of a child of 2, previously quite normal, who at that time became idiotic, then showed abnormalities of bony growth, followed by cachexia and death. Although myxedema had been considered present, autopsy showed a normal thyroid, but an extremely attenuated thymus. Lampé in 1913 reported 2 similar cases. Thus it seems that, beside idiocy from thyroid aplasia, there exists a form due to thymus aplasia. The latter should be thought of in idiots exhibiting bony deformities, as these reflect the experimental thymiprive syndrome. It would not be unreasonable to expect from thymic opotherapy, in addition to its recognized osteogenetic action, a favorable influence on certain cases of idiocy unresponsive to thyroid treatment.

Thymic Hypertrophy and Obstructive Asphyxia.—While disturbances due to thymic aplasia or hypoplasia are uncommon, untoward happenings due to hyperplasia or hypertrophy of the thymus are frequent. As Soli points out, such results are either of asphyxial or syncopal nature, the former type predominating in children and the latter in adults. The two types, indeed, may be present simultaneously, though usually they are not. Between the trachea and sternum the thymus moves up and down 3 to 5 cm. with the respiratory movements. Upon combined expiration and extension of the neck the thymus partially herniates into the cervical region. As with other hernias, permanent displacement and even strangulation may occur, the sternocostovertebral bony ring and the sternoclavicular attachments of the cervical fasciæ being the constricting structures. Strangulation is favored either by excessive size (non-involution or hypertrophy) of the thymus or by the frequent abnormal narrowness of the bony ring. That the trachea is sometimes found flattened out does not imply that this is the only structure pressed upon. In experimental work the author found that the jugular venous circulation was impeded where the pressure was not sufficient to occlude the trachea. An effect of compression of nerves, such as the recurrent laryngeal, phrenic, vagus, and cardiac, in the production of the dangerous thymic symptoms has not been proved.

That thymic asphyxia may be caused through compression of the trachea cannot be doubted. Proof has been afforded: 1. In autopsies. In a case of Clessin's even a pin could hardly be passed through the seat of constriction of the trachea. 2. During surgical operations. Several operators have noted compression or kinking of the trachea by the thymus, relieved by removal of the latter. 3. By tracheoscopy (Jackson). 4. By X-ray examination (Schubert). Likewise, it is unquestionable that thymic asphyxia may occur

through compression of vessels (jugulars, innominates, superior cava, etc.), as proven: 1. In autopsies. 2. At operations (Denecke). Indeed, pressure upon vessels occurs more frequently than appears, as it varies "with different positions of the neck which augment or diminish the phenomena of venous stasis" (Barbier).

While it is freely stated that the mechanical theory does not account for all the untoward happenings due to thymic hypertrophy, it cannot be denied that it explains all the asphyxial phenomena met with, and the asphyxial type is that almost invariably manifested in children. That this type is much more frequent in the child than in the adult is because in the former the thymus is at its maximum and the bony ring (Grawitz's space) at its minimum of development. That a large thymus should cause no trouble in one case but do so in another is accounted for by a difference in the diameter of the superior straits of the thorax in the two cases. That pressure should not always be noted at autopsy is due to the fact that such pressure is often exerted upon soft structures, *e.g.*, vessels during life; the thymus becoming decongested after death (d'Oelsnitz), these soft structures resume their normal shape. That the asphyxial phenomena due to thymic hypertrophy are actually of mechanical origin is proven by the fact that they may be observed whatever be the nature of the tissues encumbering Grawitz's space. Thus in a case of Hotz's, upon performing thymectomy for tracheal stenosis, the organ was found not hypertrophied but undergoing involution. Considerable relief was nevertheless afforded. Death later taking place, the autopsy showed a cold abscess developing from the third and fourth dorsal vertebræ.

Excessive Thymic Function and Sudden Death by Syncope.—A young woman of 20, in perfect health, dies suddenly while dancing. Autopsy: large thymus (Dennis). A workman of 18 dies suddenly in the woods, during coitus. Autopsy: large thymus (Wälz). A child of 16 months falls into a tub of water; though at once pulled out, it cannot be brought to life. Autopsy: large thymus (Paltauf). A young girl of 18 is to be subjected to an interval operation for appendicitis; death takes place during induction of chloroform anesthesia. Autopsy: large thymus (Lapointe). About 200 more or less similar cases exist in literature, with death resulting from no other appreciable cause than emotion, or sudden excitement, and with a large thymus found at autopsy. Whether in infants, children, or adults, there is a manifest suddenness in the symptoms and syncopal phenomena which differentiate these cases from those arising from mechanical pressure. In the former, the thymus is generally large, but not enormous; in a few cases, even, it is of normal size. The sudden death from syncope is thus not due to thymic enlargement.

Paltauf has pointed out that these cases present the following characteristic features: (1) Pale skin, scanty hairy covering, exaggerated panniculus adiposus, and poor development of the genital glands and adnexa; (2) hyperplasia of the various groups of lymph-nodes (neck, axillæ, and mesentery); (3) hyperplasia of the tonsils; (4) hyperplasia of the lymphoid follicles of the nasopharynx, base of the tongue, and intestinal wall; (5)

hyperplasia of the spleen; (6) hyperplasia of the thymus; (7) cardioaortic aplasia, with excessive temity of the heart walls; (8) lymphocytosis, etc. These stigmata are seldom all present at once. Often there is hyperplasia of the thymus alone (status thymicus) or of the lymphatic glands alone (status lymphaticus); where both are involved the complete form is present (status thymicolymphaticus). Both, according to Paltauf, form part of a single general constitutional anomaly, which may have been of toxic or infectious origin (or possibly related to disorders of internal secretion). This condition involves a considerable diminution of resistance to infections, intoxications, exogenous or endocrine excitations, etc. It also implies a special lability of the heart, which is predisposed to inhibition through factors without influence in a normal subject. Such a vulnerability of the heart Eppinger and Hess term vagotony; with it there coexists a diminished excitability of the sympathetic. Sudden death in individuals with a large thymus is thus due, according to Paltauf, to loss of equilibrium between the tonuses of the vagi and sympathetic.

Paltauf's theory is not without its weak points, as it presupposes a toxic or infectious origin for the thymicolymphatic state, which has still to be demonstrated. That thymic and lymphatic hyperplasias are reactions to a common process has also yet to be shown. The structural constitution of the thymus is quite different from that of the lymphoid organs, and it is now classed as an organ with an internal secretion, which is not true of the lymph-nodes. A dual etiology in the thymus and lymphatic changes is conceivable. Wiesel and Hedinger have shown that the lymphatic state is constantly accompanied by hypoplasia of the chromaffine system, while the pure thymic state is almost constantly associated with hypertrophy of these organs.

The inadequacy of Paltauf's theory in explaining a rather large number of cases of sudden death in bearers of a large thymus brings back to favor the explanation formerly advanced by Svehla. The large thymus may be thought of as exercising a toxic action by reason of its secretion being quantitatively or qualitatively abnormal. One can even conceive of a *hyperthymism* independently of hypertrophy of the organ—in fact, with an organ of normal or even subnormal size. Can the thymus, through its secretion, act specifically upon the cardiac innervation and be the direct or indirect cause of a lethal syncope? The answer to this can be given from the experimental hyperthymism created either by injection of thymus extract or by embedding in the tissues a thymus of foreign origin. From such procedures there result in the dog, for example, anorexia, fatigue, a hirsute aspect,—all symptoms of intoxication related to the substance introduced. Besides, there is a *particular excitability of the cardiac nerve centers,* and if repeated injections of thymus extract are made, the blood-pressure descends. Death may even be caused by introducing pieces of hyperplastic human thymus (Hart). This hyperexcitability of the cardiac centers chronically maintained through excess of thymic secretion constitutes a permanent source of danger to the subject. Stimuli without effect on a normal subject may be the cause of a fatal syncope. Examples of such stimuli are: a cold bath, a hot bath, a subcutaneous or intramuscular in-

jection, coitus, dancing, or apprehension related to general anesthesia. Death during narcosis in bearers of a large thymus is not a toxic, but a reflex, death, fear of the operation being the lethal factor, and not at all the narcotic itself. Death during local anesthesia may similarly occur.

Although apparently fundamentally different, the theories of status lymphaticus and of hyperthymism are, as a matter of fact, very similar. The first explains sudden death on the basis of a constitutional neuropathy of the cardiac nervous system; the latter, by a hyperexcitability, of ductless gland origin, of the heart centers. In both instances there is a violent excitation acting on a predisposed heart and causing lethal syncope.

Thymus and Basedow's Disease.—The frequent occurrence of hypertrophy of the thymus in cases of exophthalmic goiter is well known. Mattis collected 133 cases of large thymus coexisting with exophthalmic goiter and stated that 76.5 per cent. of cases of the last-named affection dying after operation had an abnormally large thymus. Thus there appears to be a causal relationship of thymus hypertrophy to severity in Graves's disease. Already in 1895, von Mikulicz held that the thyroid theory did not wholly explain the symptoms of Basedow's disease. Of course, all do not subscribe to the ideas of Hart and of Moebius, that the thymus is the primary cause of Basedow's disease, acting directly on the structure and functions of the thyroid. Some, *e.g.*, von Hansemann, consider thymus hypertrophy in exophthalmic goiter a secondary reactive process of the lymphoid tissue. That some relation exists between thymus hypertrophy and the Basedow symptoms is recognized by many German and American surgeons.

According to Garrè, the following evidence may be advanced in support of the thymic theory of Basedow's disease: 1. After thymectomy lymphocytosis (Kocher) disappears as it does after thyroidectomy. 2. Boyer was able to induce lymphocytosis by injecting intraperitoneally in animals thymus extract derived from a Basedow subject. 3. After thymectomy retrograde changes are found in the thyroid at the expiration of six months. 4. In thyroidectomized animals appearance of strumiprive symptoms can be prevented by thymus administration (Gebele). 5. Bircher experimentally induced Basedow's disease in dogs by implanting in the peritoneum hyperplastic thymus glands (from subjects free of Basedow's disease).

As Lenormant remarks, however, the precise rôle of the thymus in Basedow's disease cannot now be defined, at least from the foregoing data, for (1) it has not been proven that thymectomy gives successful results in exophthalmic goiter; (2) there is nothing specific in the production of lymphocytosis by injection of thymus extract from Basedow cases; (3) it has not been shown experimentally that thymectomy leads to structural or functional retrogression of the thyroid, and, in fact, a contrary opinion is held; (4) the author has never been successful in preventing in dogs, by thymus treatment, certain strumiprive symptoms, *e.g.*, loss of hair; (5) intraperitoneal introduction of hyperplastic thymus does not constantly give rise to a Basedow syndrome; indeed, it is even uncommon to obtain anything approaching the latter.

On the whole, the question of the relationship of thymus hypertrophy to Basedow's disease cannot yet be well discussed, owing to lack of sufficient experimental evidence.

ADRENAL INSUFFICIENCY IN DENGUE.*

By ALFRED KHOURY, M.D.,
BEYROUTH, SYRIA.

In but few acute diseases, according to the author's observations, is the symptom-complex of adrenal insufficiency so frequently—in fact, almost regularly—encountered as in dengue or breakbone fever. Hypoepinephria seems, indeed, in the majority of cases to constitute the basis of the symptomatology of this type of fever. Thus, profound asthenia, sometimes sudden in onset, but almost constant; lumbar and especially epigastric pain and tenderness, and vomiting, sometimes incessant, together with fever and various neuralgic pains, may be cited as the fundamental symptoms of the disease. Convalescence, moreover, although the disease itself is of brief duration, is often protracted and there are exhibited for two or three weeks a most unusual degree of muscular weakness, mental depression, and incapacity for work. Of 7 cases of dengue studied by the author at the close of an epidemic in Syria in 1912, only 2 had epigastric pain and vomiting, but all showed in a more or less marked degree the typical asthenia and also, with great clearness, the "white line" phenomenon of Sergent. Three of the cases were rapidly improved by administration of 30 drops of a 1 : 1000 solution of epinephrin by the mouth, and the white line could no longer be elicited thereafter. On the whole, it seems that epinephrin is likely to prove useful in shortening convalescence in this disease, and that in the grave cases of the disease—though these are uncommon—it will in part supply the present total want of an effectual remedy.

JUVENILE HYPERTHYROIDISM.†

By WILLIAM HOWARD LEWIS, M.D.,
ROCHESTER, MINN.

The term "juvenile hyperthyroidism" is intended to embrace only those cases of exophthalmic goiter occurring in patients less than 10 years of age, *i.e.*, in a period during which the glandular activities of puberty are considered to be in abeyance. This is, however, a period of growth and de-

* Summary of article in Bulletins et Mémoires de la Société médicale des Hôpitaux de Paris, November 13, 1913.

† Summary of article in the St. Paul Medical Journal, February, 1914.

velopment in which the glands of internal secretion have an important rôle to play in the human economy. In this decade there is lacking one important element, viz., sexual activity, which is a decided factor in adult hyperthyroidism—meaning by sexual activity such processes as are evidenced by menstruation, pregnancy and the menopause. In connection with the latter process, it is interesting to note that hyperthyroidism is also relatively rare in persons past 60 years of age.

Of 1512 patients afflicted with exophthalmic goiter operated on in the Mayo Clinic, only 5, or 1 in 300 cases, were under 10 years of age. In the literature for the past ten years it was possible to find mention of only 4 cases. The following are histories of the 5 cases—all in female children—observed in the Mayo Clinic:—

Case I, aged 7. The goiter and eye symptoms had appeared two years previously and at the same time moderate dyspnea on exertion, as well as tremor. The pulse had ranged from 100 to 130. The child had been growing rapidly, but there had been no appreciable loss of weight or strength. At examination she presented a marked exophthalmos, pulse 120, and a heart dilated possibly one-half an inch beyond normal. There were no definite manifestations of nervousness. Excision of the right lobe of the thyroid was followed by steady improvement and recovery, the pulse becoming normal and intoxication disappearing.

Case II, aged 4. The parents had noticed a mental irritability for eighteen months, while exophthalmos had been remarked twelve to fourteen months previously. There had been no cardiac features and the goiter had not been noted, although a somewhat unusual perspiration had been present. Both superior thyroid vessels were ligated. This was followed by a subsidence of all the symptoms.

Case III, aged 7. Goiter had been definitely present four months before, at which time the eyes were large, although photographs had shown an enlargement of the eyes for two years. Mental irritability and tremor had been observed, and the pulse had ranged from 130 to 150. No cardiac distress; no loss of weight nor strength. Distinct thrills and bruits in the superior thyroid vessels. Exophthalmos decided, but no cardiac enlargement. The left superior thyroid artery was ligated, and a week later the right lobe and isthmus resected. There was a prompt return to normal within a short time.

Case IV, aged 8. Three months previous to examination the patient had had an attack of tonsillitis with vomiting. At that time the eye symptoms were first noted, but no other subjective symptoms. On examination the child was irritable, with a distinct tremor; pulse about 130. No activity in thyroid vessels and no cardiac nor muscle damage apparent. Three months later, the left superior vessel was ligated, and a month after, the right superior. Within three days the patient developed a mild attack of scarlet fever, which caused no apparent physical disturbance and did not interfere with uninterrupted recovery.

Case V, aged 7. Goiter and exophthalmos had appeared one year previous to examination, with a pulse of 140. No other subjective features. Marked thrills and bruits in both superior thyroid vessels. These vessels were ligated, resulting in rapid disappearance of the intoxication.

Plummer's observation of the appearance of symptoms in adult exophthalmic goiter is as follows: (1) cerebral stimulation; (2) vasomotor disturbances of the skin; (3) tremor; (4) mental irritability; (5) tachycardia; (6) loss of muscular strength; (7) weight loss; (8) cardiac insufficiency;

(9) exophthalmos; (10) diarrhea; (11) vomiting; (12) mental depression; (13) jaundice; (14) death.

In comparison with these, the following symptoms were noted in the 5 cases in children: Vasomotor disturbance of the skin in 1, tremor in 3, mental irritability in 4, tachycardia in 5, exophthalmos in 5. All the other features observed in the table for adults were lacking, or present to so slight an extent as to be insignificant. All the children were able to participate in the vigorous activities of their associates without apparent cardiac or muscular distress, while none of them even approached the crisis so frequently occurring in adults. The average adult who has progressed as far as marked tachycardia and exophthalmos has developed such evidences of nerve, heart, and muscle damage as to be obviously incapacitated. In the average adult the hyperthyroidism reaches its climax in about nine months. The average length of hyperthyroidism in the group of cases in children was 11⅘ months, or sufficient time in the adult to have produced serious disturbances. Whether this difference of intoxication in the adult and the child is due to a qualitative difference in thyroid activity, to a higher resistance on the part of the child's vascular and nervous mechanism, or to some obscure internal glandular compensation, there is at present no means of determining.

A double ligation was performed on 3 of these patients; in 2 a portion of the thyroid was resected, this being preceded in 1 by a single ligation. All of these operations gave prompt and, to date, satisfactory results, in contradistinction to adults, in whom recurrences are apt to occur within a comparatively short time after ligation unless a portion of the gland is later removed.

PARATHYROID EXTRACT IN PARALYSIS AGITANS.*

By WILLIAM N. BERKELEY, A.B., Ph.B., M.D.,
NEW YORK, N. Y.

Commercial parathyroid gland worked well in a few cases, but was found so variable and uncertain in its action that it had to be given up. Later the author used a nucleoproteid preparation of the parathyroid made up by Beebe's method. The nucleoproteid is quickly dried in a draught of cold air, so that within eight or ten hours after the warm glands leave the bullock a minute amount of smooth, yellow powder is obtained which stands physiologic test admirably, is stable, easily handled, and does not require the ice-box for its preservation. The powder is rubbed up with milk-sugar as a menstruum, and dispensed in sealed and dated bottles of 80 capsules. Each capsule contains $\frac{1}{50}$ grain of parathyroid nucleoproteid. The average dose is 2 per day—sometimes less, where the patient is sensitive to the action of the remedy.

* Summary of article in International Clinics, December, 1912.

The above preparation gives satisfaction not only in Parkinson's disease, but also in any form of tetany where the stomach can retain food. Otherwise, a sterile hypodermic preparation of the nucleoproteid must be used. In paralysis agitans there are no special contraindications, though some patients complain of "nervousness," inability to sit still, and an aggravation of their habitual constipation after a few days' dosage. Nothing is necessary in these cases except to diminish the dose and increase again more slowly. Little benefit of a satisfactory character can be expected except from small doses continued over a long period of time—three months or a year. Patients taking parathyroid require to make no change in their mode of life, diet, or habits not otherwise indicated. Those able to attend to business should be encouraged to work, but with shorter hours and more frequent periods of repose.

A few patients do much better on a hypodermic preparation than on capsules. The hypodermic solution of nucleoproteid is easily administered, and causes little or no pain or irritation, if given with proper aseptic precautions. Sometimes a capsule may be given in the morning and a hypodermic injection at bedtime—thus securing for the patient a restful night. The base of the solution is sterile normal saline solution, and each cubic centimeter contains $\frac{1}{30}$ grain of parathyroid nucleoproteid and a trace of chloroform. Kept in the ice-box, the solution retains its efficiency for at least six weeks or two months, and probably much longer.

Where the patient has obtained any relief from hyoscine before beginning the parathyroid treatment, he should continue it afterward. The two work well enough together. A pure drug must be used. The dose of hyoscine in paralysis agitans is often made needlessly large; $\frac{1}{200}$ grain is generally effective. Occasionally duboisine may work better than hyoscine. Hyoscine makes many patients so wretched in other ways that they refuse to take it. Delirium is a common symptom, and in the later stages of the disease urinary retention with overflow may occur. This should be carefully watched for. Of remedies for chronic constipation, enemata and one or another form of the extract of rhamnus purshiana will prove most reliable in the long run. Calcium salts have produced no benefit in the author's hands. Morphine hypodermically may be given in small doses and infrequently for a long while without great harm, and its employment should not be too long postponed when other remedies fail.

Of mechanical remedies, passive motions, warm baths, and general massage of the limbs and trunk are helpful, but the front of the neck should on no account be massaged; an excess of thyroid secretion is thus liberated in the system and the patient grows rapidly worse. Active exercise is of value in all patients who can take it without too great pain or fatigue. No exercise that overfatigues is good. A daily airing in a wheel chair or a carriage (not a motor-car) is essential for those who cannot walk. For patients with sufficient means, extensive traveling by easy stages is often of great benefit. The patient should be cared for with sympathy and cheerfulness, and in the common event of psychasthenic fear, nervousness, or mental depression, an ap-

peal to the reason, a resort to the consolations of religious faith, and such other rational resources as may be available will prove of marked assistance.

The patient should be encouraged to eat freely of a mixed diet—taking in moderation anything that agrees with him and does not aggravate constipation. When stimulants have been required, aërated Scotch whisky has given the author's patients more general satisfaction than aught else.

Thus treated, the patient generally attains within six months or a year to a stationary condition, not of cure, but of very fair comfort, and remains thus for an indefinite period.

RELATION OF THE THYROID GLAND TO CARBOHYDRATE METABOLISM.*

By W. CRAMER and R. A. KRAUSE,

EDINBURGH, SCOTLAND.

Most observers agree in attributing to the thyroid secretion a direct stimulating influence on nitrogen metabolism and on the total metabolism. To the latter factor they attribute, as a rule, the effect which the administration of thyroid has on fat metabolism. The observations recorded by the authors show that the thyroid hormone has a marked and very peculiar effect on the carbohydrate metabolism. If rats kept on a carbohydrate-rich diet (bread and milk) are fed from two to eight days with relatively small doses of fresh thyroid gland (sheep's thyroid was used mostly) the glycogen-content of the liver falls so low that the glycogen cannot be estimated gravimetrically in the liver. Such low values in a normal rat are found only after ten to fifteen hours' fasting.

These results were tested and confirmed by experiments on cats. These animals were also kept on a carbohydrate-rich diet (porridge and milk) and fed for one or two days repeatedly with fresh thyroid gland. Only a trace of liver glycogen was found in the thyroid-fed cats, except in 1 case, in which there was 0.37 per cent., a value considerably lower than those of the controls.

It was found that the effect of thyroid feeding on the glycogen-content of the liver is independent of feeding. Experiments on the tolerance for glucose after thyroid feeding were made on dogs, the results showing that thyroid feeding produces a slight but distinct lowering of the tolerance for glucose. There was found to be no diminution in the sugar-content of the blood, but rather the reverse.

It is concluded, therefore, that the internal secretion of the thyroid, when administered to normal animals, has an inhibiting influence on carbohydrate metabolism. But since the utilization of carbohydrates by the organism is not markedly affected, as shown by the comparatively slight lowering of

* Summary of article in the Proceedings of the Royal Society, Series B, August 26, 1913.

the tolerance for glucose, it follows that the thyroid hormone acts specifically on only one aspect of carbohydrate metabolism in that it inhibits the formation and storage of glycogen in the liver.

The similarity observed in the distribution of the urinary nitrogen in thyroid feeding and in withdrawal of carbohydrates (increased excretion being as urea and ammonia chiefly—not in creatinin and uric acid) suggests that the action of the thyroid hormone on protein metabolism is effected, partly at any rate, through its action on carbohydrate metabolism.

The most remarkable feature of the condition induced by thyroid feeding is that the marked inhibition of the glycogenic function of the liver is not accompanied by a glycosuria or, at any rate, a very marked lowering of the tolerance for glucose. This absence of any marked influence on the more obvious features of carbohydrate metabolism masks the relation which exists between the thyroid secretion and carbohydrate metabolism, and has, no doubt, been the reason why this relation has not been demonstrated before. The fact that the glycogenic function of the liver may be so completely in abeyance without producing any correspondingly marked effect on the tolerance for glucose leads one to conclude that these two aspects of carbohydrate metabolism are independent of each other to a far greater extent than is generally supposed.

The constancy with which the effect of the thyroid hormone on the liver glycogen is produced suggests this as a suitable test for the investigation of the relations which the thyroid is supposed to have to other internally secreting glands.

It does not necessarily follow from these experiments, although it is possible, that the thyroid hormone, *in the amounts in which it is poured out into the blood in a normal animal,* similarly exerts an inhibiting influence on carbohydrate metabolism. For it is a well-known fact that physiologically active substances which in large doses have a paralyzing effect produce a stimulating effect in smaller doses.

Abstracts from Current Literature on the Internal Secretions

Failure of Vision in Pituitary Disease and its Treatment.—The writers record 4 cases in which local pressure symptoms attributable to an enlarged pituitary body greatly diminished under thyroid medication. Among the local results of an enlarged pituitary are mentioned: (1) bitemporal hemianopia (the most striking but, according to some clinicians, not the commonest); (2) homonymous hemianopia; (3) a central scotoma expanding into the temporal field; (4) color defects preceding form defects. Perimetric studies show that a piece of the upper and outer temporal half of the field is generally obliterated before the rest of that

half in the temporal hemianopic cases. The writers suggest that, given equal pressure on all the fibers of the chiasma, the function of some fails before that of others. Fisher thinks that the visual symptoms in many cases are best explained by traction on the visual pathways owing to upward growth of the tumor behind the chiasma and between the optic tracts in the interpeduncular space. The loss of function of vision is in advance of the apparent structural changes, and on relief of pressure the vision often recovers. Case I was a woman of 40, acromegalic, who had been observed for five years. It was the puffiness of her enlarged hands which originally suggested thyroid treatment. General and local improvement followed. The fields became practically normal. Skull radiography showed an enlarged sella. Case II was a lady of 25, who had become stout eighteen months before. At that time some visual failure set in, which rapidly increased, then diminished, and then increased again. She could not see things at each side. The case was diagnosed as in all probability due to pituitary disease. Thyroid feeding brought the visual fields almost to normal. Later, pituitary extract was also given. Case III, a middle-aged man, had had failure of vision to the left for a year or two. No distinctive acromegalic signs, but the skiagram showed a distinctly enlarged sella. Thyroid treatment had only recently been begun. Case IV was that of a typical acromegalic man. After vision had been impaired for a long time and acromegaly was well advanced, thyroid treatment was followed by decided improvement. The case supports Cushing's view that the primary optic atrophy of pituitary disease more often represents a physiologic block to light than actual nerve-destruction. Two cases of de Schweinitz are mentioned which were improved by large doses of thyroid extract with mercurial inunction. Fisher has also seen visual improvement in several cases under thyroid treatment. The writers conclude that, since in cretins and in thyroidectomized animals the pituitary tends to increase in size, one may well believe that a therapeutic hyperthyroidism may sometimes be accompanied by a diminution of the size of an enlarged pituitary. Sometimes, to be sure, glands vary spontaneously, and pressure may also subside without any drug treatment. The authors urge, however, a trial of thyroid treatment in pituitary disease. H. Campbell Thomson and W. Lang (Archives of the Middlesex Hospital, vol. xxix, 1913; Medical Chronicle, January, 1914).

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Pituitary Treatment in Diabetes Insipidus.—Numerous clinical observations have borne witness to the possible association of diabetes insipidus with lesions of the hypophysis. Haushalter and Lucien observed simple polyuria in a case of tuberculosis of the pituitary, and Simmonds in one of cancerous metastasis in the posterior part of the sella turcica. Simultaneous presence of polyuria and infantilism, of polyuria and Fröhlich's syndrome, etc., has been recorded. On the other hand, experimentation has shown, originally in the hands of Vassale and

Sacchi, that the pituitary takes part in the regulation of the water-content of the body. Animals partly or wholly hypophysectomized showed, in addition to rigidity of the hind limbs, fibrillary contractions, and clonic or tonic spasms, polydipsia, polyuria, and a urine of low specific gravity, alkaline in reaction, and devoid of albumin or sugar. In view of these observations the author was led to try pituitary medication in a case of diabetes insipidus. The patient, aged 23, after missing her menstrual periods for four or five months, developed pronounced polydipsia and polyuria until, upon admission to a hospital four months later, 5 to 6 liters of watery urine were passed daily. There was no functional or organic nervous disorder. The patient had been treated several years before for lung tuberculosis, but there were no more tubercle bacilli in the sputum at the time. Three years before, prolonged antiluetic treatment had been taken because of a positive Wassermann reaction; at the time of admission the reaction was still clearly positive, though no other signs of syphilis could be found. The patient was treated in succession with opium, belladonna, and strychnine without result. A salt-free diet had no effect on the polyuria. Calomel and iodides were also tried without result. Ingestion of epinephrin was without effect, but the first injection of pituitrin given caused the urinary output to drop from 5 to 2½ liters. By continuing the injections, the urine was kept around or below 2 liters. Thirst disappeared and the nights became quiet. The effect persisted, however, only as long as the injections were administered, polyuria and polydipsia reappearing as soon as they were stopped. Control injections of saline solution were followed by immediate return of polyuria. Attempts to substitute ovarin, pancreatin, and thyroidin for the pituitary preparation were without success. It is reasonable to believe that the polyuria in this case was related to disturbed pituitary function, but it is not possible to state whether this disturbed function was a sole and sufficient cause, or whether it were not merely a single factor in a combination of disturbances in the ductless-gland system which the injection of pituitrin was capable of temporarily restoring to their normal correlated activity. F. Farini (Gazzetta degli Ospedali e delle Cliniche, September 11, 1913; Presse médicale, November 8, 1913).

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Action of Extracts of Lymph-glands and Other Organs on the Tubercle Bacillus.—In 1886, at a time when tuberculosis was universally considered a disease conferring no degree of immunity, Marfan made the assertion that scrofula to a certain extent acted after the manner of a vaccination against tuberculosis, and later pointed out that active tuberculosis was almost never met with in subjects that had had scrofula during childhood and recovered completely from it before the age of 15, that is, provided no other focus of the disease could be clinically detected before this recovery had taken place. Since then these statements have been confirmed by a number of clinicians, and many experimenters have brought forward findings showing the importance of the rôle of

the lymphatic glands in protecting the body against tuberculosis. As contradictory results had, however, been recorded by some, and as the interpretation of the facts available involved some difficulty, the authors thought it necessary to take up the question again, studying first *in vitro* the action of normal lymph-node pulp on the tubercle bacillus and comparing it with that exerted by other organs.

The experiments consisted in the preparation of macerations of the lymph-nodes, of the splenic pulp, of the liver, and of the brain, and their sterilization by tyndallization. To these macerations was then added a definite quantity of tubercle bacilli, and after being left in the incubator for a time, the contents of each tube was injected into a fresh guinea-pig. The controls received a like amount of tubercle bacillus emulsion, previously subjected to a similar treatment by tyndallization, incubation, etc. Taking the results as a whole, the lymph-node pulp seemed plainly to reduce the virulence of the tubercle bacilli, guinea-pigs receiving the pulp preparation surviving even 3 times as long as the controls. In trials with splenic and hepatic pulp, the period of survival was 2½ times as long as in the controls. Using serum, the survival was 1.25 times as long, and using brain tissue, only 0.56 as long, the animal thus dying before the control. The animals given injections of lymph-node or spleen extract and dying rapidly showed only quite localized tuberculous lesions. Thus, *in vitro* normal lymph-node and spleen have a distinct inhibitory action on the tubercle bacillus. While the effect may possibly be due to autolysis products, the authors believe that, since various authors have observed this inhibitory action likewise *in vivo*, it takes place in the living tissues, before autolysis. Marfan, Weill-Hallé, and Lemaire (Journal de physiologie et de pathologie générale, July, 1913; Presse médicale, November 12, 1913).

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The Coagulation of Blood and the Thyroid Gland.—As it is frequently difficult to determine in a goitrous individual whether a condition of excessive thyroid function or one of diminished thyroid function exists, a differential coagulation test, if valid, becomes one of eminent clinical importance, upon which may be based rational surgical or medical treatment. Such a test was subjected to a critical analysis by the authors. The instrument used was that recently devised by Fuld, consisting of a metronome, to the pendulum of which is attached a U-shaped glass tube. The drop of blood to be examined is allowed to fall into this tube. A small leaden ball is then introduced with the tube. The pendulum is at once set in motion, each swing corresponding to a second of time, and as long as the drop of blood remains fluid the leaden ball rolls along the bottom of the tube. But as soon as coagulation sets in, the motion of the ball stops. The number of excursions of the pendulum before the leaden ball becomes stationary presents the coagulation time in seconds. Under normal conditions this time is two or three minutes.

In each of a large number of cases of goiter the coagulation time was

found to be increased, whatever the actual functional condition of the thyroid. In conditions of hypothyroidism, as in cretins and cretinoids, the delay in coagulation is more pronounced than in the thyrotoxicoses. It is not possible to differentiate between hyper- and hypo- thyroidism by determination of the coagulation time. In 3 cases, after excision of a goiter and resection of the thymus, the authors observed an improvement in the coagulating power of the blood. Administration of thyroid extract in doses not too large results in certain cases in an improvement in the clotting property. In a case of hemophilia associated with infantilism of thyroid origin thyroid administration restored the power of coagulation. Before this treatment was instituted a drop of blood had not clotted in fourteen hours, but after the thyroid extract it clotted in twelve minutes. The explanation of the greatly prolonged coagulation time that is observed in disturbances of the internal secretions and in the "status hypoplasticus" may possibly account also for the deficient coagulating power observed in hemophilia. The suggestion is made that the fundamental disturbance may lie in the enzymotic processes in the blood. These may also be at fault in the delayed coagulation that is present in nephritis, in various types of anemia, and in certain diseases of the liver. Julius Bauer and Marianne Bauer-Jokl (Zeitschrift für klinische Medizin, Bd. 79, Nu. 1 und 2; Medical Record, February 7, 1914).

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Accessory Pancreas.—Under this term are comprised islands of aberrant pancreatic tissue, unrelated directly or indirectly with the main gland and existing in abnormal locations. Accessory pancreatic tissue has been found in the gastrointestinal wall in nearly its whole extent except the colon. It is met with oftenest in the duodenum, less frequently in the jejunum and stomach, and still less often as one travels down toward the cecum. Aberrant pancreas is far from being a rare condition. It is not frequently mentioned in literature because not likely to be found unless especially sought at autopsies. Mouchet found 5 cases in 200 autopsies, and the author 6 cases in 467 autopsies. Thus, there is about 1 case in every 60 subjects examined. In each of these instances the accessory organ was of considerable size, and in all but 3 it was structurally complete, with islands of Langerhans, secreting elements, and secretory ducts. Histologically, there is nothing to contradict the supposition that these organs fulfill the same secretory function as the normal pancreas.

From the clinical standpoint it is of significance to note that in medical affections of the main gland the accessory pancreas is not necessarily also involved. Thus, in diabetes mellitus it might compensate in a measure for the lacking internal secretion of the diseased main organ. In the great majority of instances the accessory pancreas includes islands of Langerhans normal as to size and numbers. From the surgical point of view it is known that certain inflammations of the pancreas are often

associated with pre-existing disease of the liver or biliary passages, the ducts of the liver and pancreas being in sufficiently close anatomic relation to render infection of the one a factor in infection of the other. The aberrant pancreas never shows this close relation to the biliary passages and therefore readily escapes when they are infected. Finally, the surgeon must bear in mind the possible existence of an accessory pancreas in order to avoid mistaking it for a tumor in the course of an abdominal operation. Saltykov ascribes to accessory pancreatic tissue the intestinal conditions studied by various authors under the name of carcinoid tumors (Oberndorfer) or adenomyomata of the intestine (Trappe). O. Kremer (Archives de médecine expérimentale et d'anatomie pathologique, September, 1913; Semaine médicale, February 4, 1914).

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Pituitrin as an Ecbolic.—Pituitrin exerts a more pronounced oxytocic action in multiparæ than primiparæ. Its administration seems to close that gap of time intervening between the true onset of labor and the final stage of delivery, which frequently causes unnecessary loss of time to the physician and a waste of energy on the part of the patient. Of the author's total number of 77 cases, 27 were primiparæ and 50 multiparæ. Of the 27 primiparæ, 14 had normal delivery, while in 13 cases forceps were applied. In the 13 cases the pains were increased by the pituitrin to a very marked degree, though not sufficiently to complete labor; 7 of the number were of abnormal presentation. In the 50 multiparæ the pains were markedly increased, with but one exception. Forty-four were delivered in twenty minutes to two hours. In 6 cases forceps were applied, 3 of which were abnormal presentations.

Pituitrin leaves the patient in much better physical condition after labor is completed. The child also seems to be in better general condition. Of the multiparæ very few had after-pains, and where these were present they did not last more than ten to fourteen hours. The author noted that the uterine contractions remain more permanent and the lochia flows quite normally after pituitrin. Since beginning its use, he has entirely discarded ergot and has had but 1 case of hemorrhage, which was controlled promptly by packing the vagina with cotton tampons. This case followed a forceps delivery, and, when it was once controlled, the hemorrhage did not return.

In administering pituitrin it is important to use a fresh preparation. The syringe must be entirely free from other substances, particularly alcohol, which seems to interfere with the drug's action. The author finds that better results follow subcutaneous injection well under the skin in the gluteal region than in the muscles or fatty tissues. It is also important not to give chloroform before the child's head is pressing upon the perineum, as its early administration retards the action of pituitrin, delays labor, and necessitates a second injection. Benson (New Orleans Medical and Surgical Journal, June, 1913).

Internal Secretion of the Salivary Glands, and the Relation of the Latter to the Reproductive Organs.—The salivary glands present certain phenomena which might be designated as "genital." Thus during sexual excitement they secrete more, pregnancy and certain pathologic genital conditions produce the same result, and ovariotomy is sometimes followed by parotitis. Mumps is frequently accompanied by orchitis or oöphoritis. Of 13 cases exhibiting various forms of the relationship under discussion, 3 concerned syphilitics, of whom 1 had syphilitic orchitis, another peritoneal carcinomatosis, and the third, obesity of thyroid origin. In 8 other cases obesity was combined with the status thymicolymphaticus, involving an enlargement of the thymus. The obesity in these 8 cases could be ascribed in some to the thyroid, in others to the pituitary, and in 1 instance to an ill-defined functional brain disturbance. The 2 remaining cases in the series of 13 were patients with exophthalmic goiter. The great majority of these obese patients showed genital infantilism, and one of the Basedow cases was impotent. As to the glands involved, they generally comprised all the salivary glands, sometimes with the lachrymal glands in addition. Judging from clinical observation alone, the changes in these glands consisted either of hypertrophy or of fatty infiltration. Many of the patients were quite young, and their sexual capacity could not be ascertained, but several of them showed peculiarities of growth and stature which, at later periods in life, are rather often associated with genital abnormalities. Thus it may be presumed that the salivary glands play a rôle as internally secreting organs and exert a partial, but not insignificant, influence on the reproductive organs. The aggregate of changes noted in the salivary glands often recalled the syndrome of Mikulicz. The latter, when not an indication of syphilis or leukemia, appears to be associated especially with the status lymphaticus or thymicolymphaticus. Precisely these conditions were met with in many of the 13 patients discussed. In any case the nature of the active principle of the internal secretion of the salivary glands is at present unknown. L. Mohr (Zeitschrift für Geburtshülfe und Gynäkologie, p. 1, 1913; Semaine médicale, November 26, 1913).

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The Ductless Glands and the Nervous System.—Reference made to the views of the Vienna school on the function of the thyroid secretion, as expounded by Falta and Rüdinger. According to their theory, the thyroid and parathyroid secretions oppose one another, the former stimulating the sympathetic nerves, the latter inhibiting them. The secretions of the pancreas and of the parathyroids retard metabolism, while those of the thyroid and adrenals augment it. Hence loss of the thyroid secretion leads to (1) slowed metabolism; (2) absence of stimulation of the adrenals; (3) escape of the pancreas from inhibition; (4) decreased excitability of the vagus in all its area of distribution, which includes the thyroid gland.

One of the perplexing features of all these glands is their double anatomic constitution. In each, two types of cells are found living in close neighborhood, but there is no obvious reason why they should have chosen such a union. Thus the thyroid gland is associated with the parathyroids. The pituitary can be divided microscopically into the posterior pars nervosa and the anterior glandular portion; between the two lies the pars intermedia. The adrenal glands consist of cortex and medulla; it is now recognized that the adrenal medulla consists of paraganglion cells, controlled by the splanchnic nerves and secreting the epinephrin that maintains the unstriped muscle regulated by the sympathetic nervous system at a fair level of tone for its routine activities. As for the pancreas and the testes, each again contains secreting cells of two distinct types. The cortical cells of the adrenal glands secrete a special lipoid, a doubly refracting fat, and so do the interstitial cells of the testis. Active chemical substances of relatively low molecular constitution, not destroyed by boiling, can be extracted from the adrenal and pituitary glands, and apparently from the thyroid and the pancreas also.

The author enumerates clinical facts suggesting a common bond between the separate ductless glands, and urges the need of further observation and research in the matter of these tangled relationships. He particularly commends the adrenals to the attention of any neurologist who may be seeking for deeper acquaintance with the physiologic processes of nervous activity. Elliott (British Medical Journal; Charlotte Medical Journal, March, 1914).

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Physical Evidence of the Thymus.—Blumenreich in 1900 determined the area of dullness of the thymus by percussion, and afterward by autopsy proved his outlines to be correct except for tongue-like processes or lobes which did not appear in view. Successful attempts to obtain a shadow by the Röntgen rays had been reported, but attempts made by the authors to substantiate those findings ended in absolute failure.

The authors' exploratory method aims at a refinement of the Blumenreich technique by means of muffled auscultation and very light percussion. The thymus is covered by the thick sternum and rests on the air-filled trachea; hence any jarring may change the percussion sound. The thymus edges are almost continuously covered by lung tissue. One of the authors constructed a small instrument consisting of a small plexor and pleximeter which can be worked with one hand while the stethoscope is held by the other. In addition to auscultatory percussion the authors employed the so-called friction method for determining the borders of the thymus. This consists in placing a phonendoscope in the middle of the thymus area while a bristle brush is drawn diagonally over the sternal area and the point noted where the sound is deadened or lost. More than 140 cases were examined and $\frac{1}{10}$ of them confirmed by autopsy. The thymic area was outlined with reference to the suprasternal notch, the sternal borders and the ribs.

The greatest anatomic development of the thymus takes place between the sixth month and the third year. The authors found the thymic dullness during this period of rhomboid form, varying in size according to the age. The lower edge generally reached to the second or third rib and commonly ran in an oblique direction. A clear, full tone was found between the lower border of the thymus and the upper border of the heart. The lateral borders correspond in general with the sternal line on the right and the parasternal line on the left. The size of the thymus varies according to the age of the child and its nutritive condition, and to certain pathologic conditions.

Of the structures which may be mistaken for enlargement of the thymus, the lymph-glands are the most important. Tuberculous changes in the lung also cause deception. Carl Basch and Adolph Rohn (American Journal of the Diseases of Children; Albany Medical Annals, September, 1913).

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Studies on Epinephrin Glycosuria.—The author found that whereas 150 Gm. of grape sugar increase the sugar content of the blood, this increase is, as a rule, insufficient to evoke glycosuria. If epinephrin is injected subcutaneously it gives rise to glycosuria, provided that immediately before the injection the organism has received a considerable amount of grape sugar or of foods containing it. In this event the glycosuria is accompanied by a marked hyperglycemia. If, however, instead of grape sugar, levulose has been administered, no glycosuria results.

Another observation made was that the glycosuria-producing and diuretic properties of epinephrin are quite independent of each other.

Small doses of cocaine sensitize the action of epinephrin, increasing both the hyperglycemia and the glycosuria. On the other hand, a preparation containing the total alkaloids of opium, if injected with epinephrin, inhibits the glycosuria-producing powers of the latter. The mechanism of this inhibition is twofold. On the one hand, the opiate delays the mobilization of the glycogen in the liver and reduces the hyperglycemia; on the other, it diminishes the glycosuria by impairing the secretory activity of the kidneys. T. Landau (Zeitschrift für klinische Medizin, vol. lxxix, Nos. 3 and 4).

The above facts are pregnant with significance from the viewpoint of the mechanism of diabetes and its treatment. There can be little doubt that a derangement of the internal secretions is at any rate in part responsible for this condition, and that possibly an excess of the internal secretion of the suprarenal capsules or of some allied gland is an important factor in the production of diabetes. There is another necessary component in the nexus of epinephrin glycosuria, namely, the intake of a sufficiently large quantity of grape sugar. In other words, the dietetic factor in diabetes is an important one. Another fact brought out by the experiments of Landau is that the therapeutic value of opium in diabetes may in part be due to a harmful effect of this substance upon the renal epithelium. (Editorial in Medical Record, March 14, 1914.)

Combined Hyperthyroidism and Pancreatic Insufficiency.—A man 58 years of age was admitted to a hospital for treatment of a rebellious chronic diarrhea. The patient was mildly alcoholic. The disturbance had set in four months before with an abscess in the throat and a few small abscesses on the head. The diarrhea, with some mucus and blood, as well as tenesmus, appeared shortly after. The patient had lost much weight, and his temperature showed large fluctuations, as in hectic remittent fevers. A few points of suppuration still existed on the posterior surface of the cranium. There was noted a slight degree of exophthalmos, which the patient said he had not previously noticed. There was also a slight tremor of the fingers. The reflexes were diminished, but sensation was normal.

The patient died and an incomplete autopsy was made. The liver was found enlarged and in a state of fatty degeneration. The pancreas seemed normal and but slight microscopic changes were found. The case was thus one of typical functional pancreatic insufficiency, accompanied by the ordinary phenomena of hyperthyroidism. Experimentally as well as pathologically, evidences of a reciprocal relationship between the pancreas and thyroid have frequently been noted. In the author's case, however, it did not seem plausible that the condition of the pancreas, which was so slightly diseased, should have reacted on the thyroid. On the other hand, the tachycardia, tremor, and exophthalmos had already been present when the patient was admitted. It was therefore possible that these phenomena had been primary and reacted on the liver. The glycosuria noted in the case may have been due either to the hyperthyroidism or to the deficiency in the pancreatic internal secretion. C. B. Udaondo and O. M. Pico (Revista de la Sociedad médica Argentina, May-June, 1913; Semaine médicale, December 10, 1913).

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Adrenals and Puncture Glycosuria.—Mayer and Kahn had previously shown that after bilateral removal of the adrenals in rabbits, the glycosuria normally produced by puncture of the floor of the fourth ventricle did not occur. Participation of the adrenals in the production of this type of glycosuria was therefore rendered probable, and these observers had concluded that upon transmission of the stimulus due to the puncture by way of the splanchnics to the adrenals, the latter discharged their epinephrin, thereby bringing about glycosuria. These authors had been able to demonstrate, moreover, that the adrenals, besides exhibiting a diminution of the chromaffine reaction under these circumstances, showed a less content of blood-pressure-raising principle than normal. The present author concludes from his research, on the other hand, that histologic study of the medulla of the adrenals affords no ground for assuming a participation of these organs in the production of puncture glycosuria outside of the direct sympathetic effect. Upon removal of one adrenal there is noted in the other adrenal a marked loss in chromaffine substance, which loss depends upon the splanchnic being intact. The author's studies

showed also that the chromaffine constituent of the secretion of the adrenal medulla is produced in the cells of the medulla and then discharged into the vascular system. In rabbits the several stages of this process take place independently in the various portions of the medulla. A. Jarisch (Zeitschrift für experimentelle Pathologie und Therapie, vol. xiii, No. 3, 1913).

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Final Results in Hypophyseal Surgery.—Report of a case of typical Fröhlich type of hypophyseal disease, with marked signs of endocranial pressure, operated two years before by the intranasal route. A cyst was evacuated and recovery followed, the result of feeding pituitary gland over two years.

The indications for operation in hypophyseal disease may be classified as absolute and relative. Operation is absolutely indicated in those cases in which the tumor immediately jeopardizes the life of the individual or is causing progressive blindness. It is relatively demanded when because of perverted, or increased, or decreased secretion, the well-being and ultimately the life of the individual are threatened. If the tumor is growing rapidly or has grown to a large size, or if a cyst has suddenly filled, there occur pressure symptoms both locally and generally that imperatively demand intervention. As the safety of the operation increases, the field of the relative demand will be broadened.

Acromegaly should be treated more conservatively, particularly since many of the cases have passed over into the stage of hypopituitarism. As the safety of surgical procedures increases, operation should be attempted in the early stages before the growth has left the sella. The more complicated and late cases, and those with atypical signs, should be treated medically until the results in the typical cases are well established. Allen B. Kanavel (New York Medical Journal, April 26, 1913).

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Hyperglycemia, Hypertension, and the Adrenals.—That injections of epinephrin in animals cause both a rise in blood-pressure and increase in the relative amount of sugar in the blood is a well-known experimental fact. Hence, it has been suggested that the high blood-pressure in renal disease is due to an excess of epinephrin in the blood, and a study of the changes taking place in the amount of sugar in the blood in nephritic patients with high pressure has been undertaken. No unanimous opinion having as yet been reached on this score, the author instituted experiments to determine the content of sugar in the blood in cases of arteriosclerosis with hypertension but without disturbed renal function, as well as in patients with chronic nephritis and high blood-pressure. It was found that hypertension of renal origin may be accompanied by hyperglycemia, but that in arteriosclerotic hypertension without disturbance of renal function the relative amount of sugar in the blood is generally not increased. This latter observation would tend to weaken the theory that

in these cases of arteriosclerosis there is present an hyperadrenia. Landau, moreover, found nothing in the nature of the structural changes in the adrenals in human arteriosclerosis and in experimental atheroma to indicate an excessive activity of the adrenals. These findings agree with the observations of the author. A. Farini (Gazzetta degli Ospedali e delle Cliniche, August 3, 1913; Semaine médicale, November 26, 1913).

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Active Principles in the Hypophysis.—The preparations of the pituitary in general therapeutic use can be classed in 2 groups. To the first group belong pituitrin and pituglandol, and to the second, hypophysin. The active substances present in the first group raise the blood-pressure, while those in the second group lower it. The constituent of hypophysin which lowers the blood-pressure is identical with the vasodilatin which exists in all organs of the animal body, while the substance which raises the blood-pressure is identical with vasohypertensin, which has been found in the blood, the thymus, the salivary glands, the pancreas, and the brain. Separate preparation of vasodilatin and vasohypertensin from the anterior and posterior lobes of the pituitary is expedient. Fühner's hypophysin the author considers a crystalline mixture which does not in itself constitute the active principle, but contains it in admixture. L. Popielski (Berliner klinische Wochenschrift, No. 25, 1913).

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Colloidal Silicon in the Treatment of Simple Goiter.—Report of the case of a young girl whose neck enlarged rather suddenly after she had danced all evening at a ball. The right lobe was especially hypertrophied, pushing foward the sternomastoid muscle. There were no signs of exophthalmic goiter. A series of 4 injections, each consisting of a 3-c.c. ampule of colloidal silicon, was given at four-day intervals. No pain followed the injections. After the third injection the thyroid became softer and dyspnea was relieved. After the fourth, the neck circumference was less by 3 cm. Two weeks later, after 2 more injections of the colloidal preparation had been given, the neck measure diminished 2 cm. further, practically to its normal circumference. Silica had already been used in simple goiter, but not in the colloidal state. The author is convinced that the injections were beneficial in this case and advises a trial of colloidal silicon in both simple and exophthalmic goiter before resorting to operation. Suard (Presse médicale, October 18, 1913).

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Hemolytic Action of Adrenalin.—Adrenalin has a relatively strong hemolytic action which is not caused by chloretone contained in the solution, but is due to a specific action on the adrenalin. This action is probably not dependent on temperature and is transient. With the appearance of hemolysis on mixing adrenalin with defibrinated blood the mixture becomes brownish red. This coloring is due to the fact that the adrenalin acts on hemoglobin when it is freed upon destruction of the blood-

corpuscles, and forms methemoglobin. The hemolytic action of adrenalin is much weaker than that of corrosive sublimate after a certain period of time has elapsed, but within this period it is much stronger than that of sublimate.

Addition of adrenalin hydrochloride to an emulsion of rabbit's blood causes a marked hemolysis, and a certain proportion of the blood-corpuscles are dissolved within a few seconds, even in 1:2000 dilution. S. Kariya and H. Tanaka (Journal of Tokyo Medical Association, vol. xxvi, No. 20, 1913).

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A Lipoid from the Anterior Lobe of the Pituitary.—The author extracted from the anterior lobe of the pituitary a lipoid which, injected into rabbits for a certain period in daily doses of 0.005 Gm. (1/5 grain) per kilogram of animal, induces the following phenomena: Constant restlessness, pugnacity, polyuria, and polyphagia. Bodily growth was manifestly enhanced in rabbits about 4½ months old.

Administration of this lipoid to man, hypodermically, causes at first a temporary acceleration of the pulse, slight diuresis, increased appetite, and especially, in asthenic subjects, a manifest increase in the working capacity. In patients with myocardial disease there is noted after a certain time a rise in the blood-pressure and a regularization of the heart action. H. Iscovesco (Société de Biologie, Paris, November 29, 1913; Semaine médicale, December 10, 1913).

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Action of a Lipoid Obtained from the Thyroid Gland.—The author reports experiments showing that a lipoid extracted by him from the thyroid gland strongly excites the adrenals, ovaries, uterus, and testicles. It stimulates the heart more strongly in females than in males. It slightly excites the spleen, excites the kidneys only in males, and strongly excites the thyroid, more in females than in males. The author points out that a given internal secretion produces slightly different effects, according to the sex. The thyroid lipoid referred to was found to regularize growth in the very young, to accelerate it slightly in growing subjects, and to cause a loss of weight in adults. H. Iscovesco (Société de Biologie, Paris, November 8, 1913; Presse médicale, November 12, 1913).

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Experimental Hypophysectomy and Polyuria.—Report of experiments in which almost or quite complete removal of the pituitary was effected in 5 dogs. The animals thereupon developed a copious polyuria, without glycosuria. The polyuria appeared in the twenty-four hours succeeding the operation and lasted a variable period. These findings parallel the observations made clinically, where simple polyuria or polyuria with glycosuria is rather frequently noted in the presence of hypophyseal syndromes, as indeed also in other disorders involving the base of the brain. J. Camus and G. Roussy (Société de Biologie, Paris, November 29, 1913; Semaine médicale, December 10, 1913).

Penile Vasodilator Action of Prostatic Extract.—Prostatic extracts were made from the ox, a healthy young man accidentally killed, and from 2 surgically removed hypertrophied prostates. When these were injected into the saphenous vein of dogs an active vasodilatation of the penis followed constantly. It coincided with a fall of arterial pressure and a diminution of the volume of the kidney and the nasal mucosa. The writers failed to obtain any penile vasodilatation from injection of testicular extracts. Incidentally they mention that injections of pituitary extract gave penile vasoconstriction. The writers expect to study the mechanism of the penile vasodilatation produced by prostatic extract, especially as to whether it is a direct action or one dependent on the nerve centers. L. Hallion, L. Morel, and E. Papin (Société de Biologie, Paris, February 28, 1913; Medical Chronicle, July, 1913).

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Metabolism in the Mentally Diseased.—In many cases of progressive paralysis, and still more in epileptics, there is found an increase of the lecithin of the blood-serum. That this increase in the lecithin in the mentally unbalanced is a sign of the breaking down of the brain substance is shown by Fauser's discovery—Abderhalden's method—that in the insane the brain substance itself is attacked and disintegrated. In dementia precox a marked decrease in the initiative takes place in the vast majority of cases. The author is inclined to correlate this with the disordered functioning of the sexual glands, and explains it as a pathologic intensification of a condition that accompanies normal puberty. A. Bornstein (Münchener medizinische Wochenschrift, September 9, 1913).

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Is the Pituitary Indispensable to Life?—After carrying out numerous hypophysectomies, in some instances controlled by microscopic verification, the authors came to the conclusion that it is not possible for animals to survive after complete pituitary removal. Only if some remnant—even if only microscopic in size—is retained do the animals continue to live. Operative shock could be excluded as the cause of death in these experiments. Section of the pituitary stalk is not in itself lethal, if portions of active pituitary tissue are allowed to remain. G. Ascoli and T. Legnani (Archives italiennes de biologie, vol. lix, No. 2, 1913; Zentralblatt der experimentellen Medizin, February 15, 1914).

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Epinephrin Content of the Blood in Certain Psychoses.—The author studied 17 cases, seeking to ascertain the epinephrin content of the blood in certain psychoses of the general character of imbecility and idiocy. In 11 of the cases of this type there was a considerable diminution in the amount of epinephrin in the blood; in 3 a very great diminution, and in 3 only did the amount reach the normal. The study was made also in 4 cases of senile psychoses. In 2 of these no alteration from the normal amount of epinephrin was found; and in the remaining 2, the same condition probably existed. Certain deductions regarding the relation of

hereditary influences to idiocy are made in connection with the amount of epinephrin in the circulating blood. M. Kastan (Archiv für Psychiatrie, vol. L, No. 21, 1913; Post-Graduate, January, 1914).

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Epinephrin in the Treatment of Erythema.—The vasoconstrictor property of epinephrin was taken advantage of by the author in 3 cases of erythematous taches of the face ("red nose"), 2 of the patients being young men, and the third a young lady. A solution of epinephrin hydrochloride, 1:1000, was given internally in 5-minim doses in water three times daily half an hour before food, and the treatment continued during five to six months with short intervals. The erythema almost entirely disappeared, and a year and a half after treatment it had not reappeared. No bad effect on the heart or blood-pressure was observed. Rothmann (Lancet; Charlotte Medical Journal, October, 1913).

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Pituitary Treatment of Hemorrhage in the Respiratory Tract.—In view of the current use of pituitrin in obstetrical practice for the purpose of combating uterine hemorrhage the author took up its use in the treatment of epistaxis of varying causation and in postoperative hemorrhage in the respiratory tract, in particular after turbinectomy. The remedy was injected subcutaneously or intramuscularly a half-hour before operation and, if necessary, afterward. Excellent results were obtained. Citelli (International Medical Congress, London, August 6-10, 1913; Revue hebdomadaire de laryngologie, d'otologie et de rhinologie, December 20, 1913).

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Epinephrin Glycosuria in the Frog.—Having noticed in experiments on epinephrin glycosuria that the epinephrin passes into the urine and reduces the copper solution, the author was led to suspect that this source of error might have crept into all previous experiments in this direction. He therefore investigated the subject anew, using tests for glucose other than Fehling's, and was able to confirm previous observations that the urine in frogs contains glucose after injections of epinephrin. C. Gautier (Société de Biologie, Paris, November 8, 1913; Presse médicale, November 12, 1913).

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Abderhalden Ferments in Exophthalmic Goiter.—The author sought, by the Abderhalden method, ferments destructive to various organs in 6 cases of Basedow's disease. The reaction against normal thyroid gland was almost uniformly negative—5 out of 6 cases. In the case of the ovary and thymus it was very frequently positive. In 3 out of 6 cases there were found in the blood antibrain ferments, doubtless an expression of involvement, primary or secondary, of the nervous system in this disease. Léri and Foley (Société de Neurologie, Paris, January 8, 1914; Paris médical, January 24, 1914).

Department on General Medicine

Original Article

SOME COMMON ERRORS IN NEUROLOGIC DIAGNOSIS AND TREATMENT.

By TOM A. WILLIAMS, M.B., C.M., Edin.,

Corresponding Member of the Societies of Neurology and Psychology of Paris; Neurologist to the Epiphany Free Dispensary, etc.,

WASHINGTON, D. C.

THE fundamental error too common in contemporary therapeusis, happily passing away now, is the striking at the symptoms. It is the groundwork upon which is built the nostrum evil. These compounds make appeal only to physicians versed in nothing but pharmacodynamics, and poorly versed at that.

Pathogenesis teaches better. That one knows how to slow a rapid heart does not prove the desirability of such slowing for the patient's sake. A pained abdomen does not command an opiate, but rather surgical intervention. Is there any more reason why a pained cerebrum should demand an opiate? Stupefaction by sedatives is no better treatment in nervous cases than in surgical. The difference between the two groups of cases is that surgical pathology is understood by many, while neuropathology, and above all psychopathology, is hardly even sensed save by a few.

A few examples of changed practice will make clear the point of view required in current practice in order to save the numerous nervous wrecks resulting from the exceedingly bad therapeusis now so common. If, as has been said, mistakes are more instructive than successes, there need be no apology for discussion of a few in the admittedly fallacious field of neurologic practice.

Symptomatic Treatment.—In neurology, typical examples of the errors due to survival of that conception of medicine which, ignorant of causes and mechanism of disease, sought to neutralize symptoms are afforded by the belief that an excitable person should be given bromides, the symptom of excitement being met by a depressant; or that one who feels below par should be given stimulants, of which strychnine is usually the first suggested, —although a moment's reflection should show the absurdity of treating by a purely spinal excitant an inadequacy of the higher neurones of the cerebrum in a patient with lower neurone reflexes already exaggerated. Even should a patient suffer from inadequate spinal activity, the practice would still be just as bad, as everybody would now know enough to condemn the indiscriminate giving of opium in painful affections within or without the abdomen, or the giving of purgatives for intestinal obstruction. The perniciousness of these practices stands to the reason of one who thinks in

terms of pathology. But it actually required years of application of the experimental method of trial and error before surgical method superseded these evil practices.

Indiscriminate Electrical Applications.—An error almost as common is the application of some modality of electricity to patients with what is loosely called functional nervous disease. The procedure of the physician who does this has no better standing than that of the unqualified practitioner whose existence we all deplore. He forgets, if he ever knew, that the inadequacy of a patient's response to environment by means of his nervous system may originate from a bodily disorder the treatment of which has nothing to do with the nervous system at all. The apparent relief of the patient may even be due to suggestion, just as in much of the practice of the charlatan. Those who are unconvinced by this example have only to apply what I have said about chronic disease to some acute disease. In typhoid fever, for example, the interference with nervous function is invariable, even the reflexes being modified in most cases, while the cerebral symptoms gave their name to the disease. It is a functional nervous disorder if the term has any meaning; and yet no one pretends to treat the nervousness of a typhoid patient by the unthinking empiricism so often applied to chronic conditions.

It is the prevalence of this unenlightened empiricism which prevents us from convincing legislators and other laymen of the essential difference of the science and art of medicine for which we stand in contrast with the practice of osteopathy, chiropractic, optometry, Christian science and similar attempted short cuts to the relief of suffering. An instance will show the point:—

A man was referred me by Dr. Wingerter, of Wheeling, W. Va., because of an increasing incapacity to manage his limbs; this had progressed to a point where his work as dentist was impossible. He had been treated for several months by electricity and later by massage applied by an osteopath. *No diagnosis had been made.* These measures were therefore a waste of time and money, for the man had amyotrophic lateral sclerosis, a progressive disease usually fatal in two years through paralysis of the muscles of deglutition and respiration.

Failure to Detect Tabes Dorsalis.—An error of this type is particularly common in another, but much more hopeful disease in which the spinal cord is affected. A clinical example will make the point clear:—

A school teacher, whom I saw in 1912, in consultation with Dr. Judther, of Webster Springs, W. Va., suffered for some years from recurring pain and numb feelings in the legs. These pains were believed to be rheumatic, because they seemed sometimes to be relieved by salicylates and were greatly improved by a few months at a watering place. That she became less able to perform her work was attributed to the stress of the teacher's life and so-called "general tonics" were prescribed. She went to Clifton Springs not long before I saw her and was there treated by a series of baths and exercises, alternated with rest. No diagnosis was made; yet it is not conceivable that her symptoms of five years' duration had not for some time been accompanied by ascertainable physical signs, for when I saw her last summer the deep reflexes were everywhere absent, the pupils did not react to light, the sensibility of the lower limbs was seriously impaired, and there was some inco-ordination. Of course, the diagnosis

was tabes dorsalis. Appropriate treatment[1] has enabled the young woman to recover weight and strength, and she is now performing her work more satisfactorily than for five years past. I hear that she is now quite well.

Because of space limitations, other cases are not here published, but it may be stated in general that rheumatism for lightning pains, asthenopia for paretic strabismus, gastric ulcer for tabetic crises, and even tuberculosis for laryngeal crises and cystitis for tabetic bladder are not uncommon errors. The Wassermann serodiagnosis is of but little help; for in fully 40 per cent. of tabetics, the reaction is negative. The clinical diagnosis is thus the paramount means still.[2]

Of the same type is the error of diagnosis and treatment which leads a practitioner to treat as nervous dyspepsia merely symptoms of remittent discomfort, flatulence, and pain in the abdomen, with general nervousness.

Nervous Dyspepsia Erroneously Diagnosed.—A case in point was that of a powerful man—referred in 1912 by Dr. Burch—6 feet 2 inches in height, who had lost 40 pounds in weight and suffered from insomnia, great irritability of temper and great discomfort after eating. He had greatly restricted his diet on account of a diagnosis of nervous dyspepsia. When he was first referred to me, eggs and milk were his main sustenance. Different medical men had rung the changes upon alkalies, acids, stomachics, and adjuvants of various kinds. Besides these, sedatives had been given freely; so much so that his fatiguability was extreme and he easily became lachrymose. For those who employ it, the diagnosis "abdominal neurasthenia" would have been ready. Physical examination, however, showed in the first place great exaggeration of the deep reflexes, a tachycardia of 110, and a fine tremor. Great variability of the blood-pressure at different examinations was also revealed, and excessive perspiration was easily provoked, while emotivity was a prominent feature of the case. This was not of the psychogenetic type, for the only possible agent revealed by psychoanalysis was an apprehension lest his condition might have been provoked by the excessive venery in which he had indulged until about two years before. Further analysis showed this not to be the source of his anxiety, which in so far as it was psychologic was the natural response to the morbid feelings produced by his grave physical condition.

In spite of the absence of ocular signs and of thyroid enlargement, the case was declared to be one of hyperthyroidism plus pluriglandular dystaxia. The dyspepsia was just as secondary as were the other symptoms. Although we do not know the etiology of this disease and are obliged to resort to empirical treatment, yet it is more rational to apply the latter to the more primitive disorders than to such secondary effects as dyspepsia, nervousness, insomnia, sweating, exhaustion, or tachycardia. Accordingly, the dystaxic glandular apparatus was exercised by stimulation of the cutaneous surface through changes of temperature by means of water, this being followed by periods of repose for the maintenance of adjustment during freedom from stimuli, physical or psychologic. A balanced dietary was also imposed, and the man's anxiety about himself allayed as much as possible. The therapeusis was difficult, but finally succeeded, and the man is now at work, free from symptoms, although not quite up to weight and still a little abrupt in his reactions.

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[1] This case will be published among two score to illustrate the correct, *i.e.*, antisyphilitic, treatment of tabes dorsalis which I have practised and repeatedly urged for seven years, thanks to the work of Nageotte. Nowadays even the most unthinking follow this treatment, which they so long mistakenly opposed.

[2] See case in Va. Med. Semi-Monthly, Dec. 21, 1912.

A diagnosis of nervous dyspepsia, too, is the usual fate of patients in the early stages of pernicious anemia. A proper examination of the blood would, of course, obviate this error.

In pellagra, likewise, remittence of the gastrointestinal symptoms leads to the same erroneous diagnosis and treatment on the part of clinicians who think only in terms of symptoms to neutralize.

Nervous Dyspepsia Diagnosed in a Case of Pellagra with Spinal Sclerosis.—A woman about 48 years of age was seen with Dr. Cobey, of Frostburg, Md., in October, 1912. She gave a history of long-standing nervous dyspepsia and anemia. Recently she had become progressively weaker until locomotion was impossible without assistance. Glossitis, varying in severity, was said to have lasted four years. She had been treated for years for dyspepsia, and pernicious anemia had lately been suspected, but the characteristic blood-picture was stated not to have been present. Syphilis was then thought of, and a mercurial course given without benefit.

Upon examination, the tendon reflexes proved all absent except those of the right arm and the left radius, which were very feeble. The plantar reflexes were feeble also, and the pupil reflexes, though brisk, were not maintained. Tingling and numbness in the hands and feet annoyed her.

Sensibility to pin prick was lost below the knee except on the fibular border of the feet, where it was feeble, as also in the thighs. Touch and vibration were lost and impaired in the same regions, respectively. Attitude sense was lost only in the ankles. Pressure pain was everywhere exaggerated. The temperature sense was not tested.

Motility was much weakened in the whole of the lower limbs, especially so in dorsiflexing the feet. The left triceps was weaker than the right. But the patient was feeble in general. The gait was shuffling and unsteady and she fell readily when unsupported. Ataxia was absent.

Nervous dyspepsia should be diagnosed only when its genesis is psychologic; and this can be found out only by a proper analysis of the patient's case.

Neuritis Erroneously Diagnosed.—A most common error is a diagnosis of neuritis because of the presence of local pain, especially when this is increased by movement or pressure. One such case I described fully before the Medical Society of Virginia in 1910.[3]

The pain in the right arm from which this young woman suffered was due to the dragging upon the muscular attachments caused by the tension of her muscles produced by an occupational psychogenetic writers' cramp, of which I cured her.

An occupational pain in the shoulder was similarly the cause which led a young male stenographer, supposedly neuritic, to be sent me last spring, by Dr. Noble Barnes. Actually, the pain did not arise from irritation of the nerves in the arm. Nor did it come from a psychologic source, as in the case of the last patient. The fact that it was allayed by rest, which is really no proof of a so-called neurosis, arose from its production by a traumatic lesion of the connective tissues, including the subacromial bursa.

Local neuritis is an unusual disorder except when the direct result of local trauma or infection. General infection or intoxication produces a general neuritis, the physical signs of which are well known and unmistakable.

[3] Trans. Med. Soc. Va., 1910; New York Med. Jour., Jan., 1913.

The attribution of chronic local pains, *without proper examination,* to neuritis is as reprehensible as their attribution by the osteopaths to a spinal displacement.

Errors Relative to Hysteria.—It is not possible for me to cover a tithe of the disorders concerning which the fundamental error of thought already spoken of is rampant; but I must allude to hysteria in this connection in order to say that emotivity is not hysteria,—nor is capriciousness nor fantastical behavior nor mere foolishness. The treatment of such symptoms in the belief that they are hysterical is doomed to failure. Hysteria is perhaps the only disease of mental *causation,* and of which the treatment must be purely psychologic. It is essentially quite simple. The prevalent belief in its essential multiformity is an error accountable for the apparent difficulty of its therapeusis, which is in reality quite easy. The proof of this iconoclastic affirmation is afforded by the cases I have published elsewhere,[4] and its theoretical basis, which we owe to Babinski, I have also set forth at length.[5]

A common neurologic error is the confusion of hysteria with psychasthenia, asthenic states, and dementia precox. To general practitioners, such an error is excusable, and it is beyond the province of a general society. But the frequency of the diagnosis of hysteria in cases of gross organic disease must be spoken of. This is particularly common in cases of cerebral neoplasm, especially of the frontal lobes. As I have said, peculiarity of humor is no criterion of hysteria; the symptoms of this are merely those produceable by suggestion, and hence should make us look for some other cause and demand a thorough neurologic examination.

The following case will illustrate:—

Thalamic Tumor in the Ventricles with Frontal Symptoms.—This patient was seen with Dr. Roy. Anamnesis could reveal only a marked mental torpor, with an occasional fatuous response, so it was soon abandoned and the physical examination proceded with. There was shown a marked, although equal, exaggeration of the patellar and Achilles reflexes and an absence of the abdominal and cutaneous reflexes. This, of course, was an index of interference with the functions of the precentral gyri, but afforded no localizing information, on account of the absence of inequality on the two sides. The plantar response, however, gave further information; for while it was of the flexor type on the left foot, which showed that the projection fibers were but little affected, there was on the right side, although the great toe flexed, a marked spreading and extension of the four lesser toes. This indicated an interference with the right pyramidal tract of a degree greater than was shown in the left corresponding tract, *i.e.,* if the lesion were supratentorial, it would be on the left side of the brain.

The motility could not be satisfactorily examined, for voluntary movements could not be commanded. Inspection of involuntary movement showed a distinct asymmetry of the face, the left side being more flaccid than the right; but the patient could close either eye independently. The pupils were widely dilated and iridoplegic. There was a drooping of the left side of the palate and an occasional slight deviation of the ocular axes. The grasp was very feeble. There was marked congestion of the eyelids and choking of the optic disks. No deafness was perceptible.

[4] Wash. Med. Annals, Jan.; Post-Graduate, June, 1912.

[5] Internat. Clinics, 1908, vol. iii; Boston Med. Jour., March, 1909; Jour. Amer. Med. Assoc., Dec. 21, 1912.

As the patient could not co-operate satisfactorily, further examination was postponed until the next day. This was done at George Washington Hospital, where she was taken. She was lying in a semicoma, groaning, and restlessly and slowly moving the left arm and leg. The significance of this was not adequately estimated at the time. The pulse was small and not slow. The palate was no longer deviating. Reflexes of the right arm were more active than those of the left, this again pointing to a left-sided lesion. There was an exudate in the left of the disk.

The following day the facial paresis had disappeared. There was no longer extension of the outer toes. The arm movements were less. The disk was not more choked. She appeared to see better. She was more collected, and said that there was pain in her forehead and slight pain in the occiput. Furthermore, she was able to respond to the test for the diadococinesis, which showed that although the movements were very slight, this function was not impaired.

The papilledema and the coma disappeared; but as no definite focal symptoms appeared then, it was decided not to operate at the time and the patient returned home.

Moria was then the most marked feature of the case. This symptom, consisting of an ill-timed facetiousness of somewhat infantile humor, is regarded as characteristic of frontal lobe involvement; and we believed that the neoplasm might be in the corpus callosum, as there were no convulsions such as are apt to occur as a frontal growth extends backward toward the Rolandic area. There was also an absence of the mutism which occurs in some cases of large left frontal tumor. But the left side could not be decided upon, for while the toe sign and increased right arm reflexes and deviation of the palate to the left pointed to an interference with the left projection fibers, the weakness of the left face contradicted this. However, the excursive movements of the left arm and leg were, as I now believe, erroneously interpreted as part of the general restlessness of semicoma which could not show itself on the right side because of the supposed interference with motility by a lesion of the left frontal lobe pressing backward enough to impair right-sided movements.

Soon afterward, examination showed a positive Brudzinski sign bilaterally. The Kernig angle on the left was 60 degrees, and on the right 70 degrees. The uvula was deviated to the left. The left face was comparatively inert. The right lesser toes again extended on stroking the sole. There was a moderate starring of the right papilla, without bulging or distinct exudate. The inertia of the left face, recurring again, contradicted the other signs, all of which pointed to a lesion of the left side. This appearance of the face may have been due to a general inertia with a relative irritation of the right side of the face; but this was not adequately considered at the time, I regret to say.

Although she was either very somnolent or silly and flighty, on one occasion, although she could hardly recognize people, while being tested for a passing diplopia, she said when I covered the left eye that the left object vanished.

Through a misunderstanding, I was not able to be present at the operation, and Dr. Garr decided to explore the left frontal lobe. Any relief thus given did not improve the symptoms, and the patient died some days later.

Interpretation of the Symptoms.—The intense moria was certainly not due to the thalamic lesion found *post mortem*. It is a symptom of impairment of the function of the frontal lobes, and was due to intense pressure of these lobes produced by the damming of the cerebrospinal fluid into the anterior limbs of the lateral ventricles by the blocking of its passages through closure of the third ventricle by the growth in the left thalamus extending across the sagittal plane. Thus, it was a frontal syndrome from which the patient suffered, although the growth was not frontal, but thalamic.

Had the visual fields, however, been carefully explored before the occurrence of the internal hydrocephalus, it is hardly likely that some hemianopsia would not have been found on account of the interference with the fibers leading from the optic tract or those from the calcarine region *en route* to the thalamic region.

Again, an examination of the attitude sense would have revealed a distinct impairment, on account of the interference with the afferent fibers from the spinal cord which find their last relay station in the thalamus before proceeding to the cortex. It is likely, too, that other forms of sensibility might have been impaired in some degree, and an incomplete hemihypesthesia might have been revealed had the patient been examined neurologically before the pressure upon her frontal lobes prevented intelligent responses. The thalamic form of ataxia should also have been revealed had she been able to perform the movements required for ascertaining the defect. But when I first saw the patient, none of these tests could be performed, and the syndrome was an almost purely frontal one, and entirely prevented the diagnosis of the condition which led to it—so that we were helpless, even during the operation.

This case affords another illustration of the supreme importance of a proper neurologic examination of cases of cerebral tumor before the tension has increased so as to prevent co-operation on the part of the patient, and before the focalizing signs have become masked by remote signs such as dominated the picture in this case.

Although in this particular case the tumor was not accessible to surgery, in other cases, especially those in the posterior fossa, the local signs are very readily masked by those remote ones due to blockage of the ventricular circulation.

Above all is it important that patients exhibiting what is often loosely called hysterical behavior should be examined by a competent neurologist, to ascertain if the genesis of their peculiar conduct is really hysterical in mechanism or whether their peculiarities are not those of pseudohysteria from organic defect. I cannot repeat too often that the diagnosis of hysteria should never be made by exclusion, but always, if possible, by its genesis, and if that is not possible, by the form of the syndrome exhibited,—by which is meant the inconsistency of the symptoms shown with those of the topographic arrangement or physiologic groupings characteristic of organic or functional disease arising in the body, as against their consistency with functional groupings comprised under the psychologic rubric, association of ideas.

The reverse error, viz., of diagnosing something else when the symptoms are exclusively hysterical, is also quite frequent, as in my case of hysterical phobia diagnosed as epilepsy.[6] The error is very common in regard to paralysis.

A knowledge of psychopathology is, of course, the remedy; but this knowledge becomes dangerous when it leads to the ignoring of physical conditions in a case which is also hysterical. It must be remembered, however, that the most frequent of all the suggestions of bodily disease is bodily disease itself, and the removal of a hysterical fixed idea concerning one's health is not sufficient in a patient in whom some physical disorder also exists.[7]

[6] Described in Archives of Pediatrics, Feb., 1913, and British Journal of Children's Diseases.

[7] Some of the cases I presented to the District of Columbia Medical Society and published in the Post-Graduate, June, 1912, are of this type.

Suggestive therapeutics, which is so much vaunted by some, I consider a *grave neurologic error.* Psychotherapy should be a constructive growth built on analysis, and not a mere imposing of behavior upon the patient willy nilly, through a sidetracking of his attention by electricity, hypnosis, joint manipulation, or religion. An instance follows in which the inefficiency of such procedure is shown:—

A prominent real estate man in one of the larger Southern cities was attacked recently by the condition which precedes and leads to arteriosclerosis. A specialist ordered certain exercises and a dietary. But the real estate man adopted Christian science. He believed himself to be cured, and was obsessed with the idea that "all is God—God is good—all is good." His natural business caution was replaced by an unreasoning and happy-go-lucky optimism. Result—ruin and suicide in four months.

Sending Patients to Sanitariums.—Finally, a serious neurologic error is the sending of a patient to a sanitarium for nervous diseases without knowing the class of treatment to be given. A proper diagnosis should first be made, for this will often obviate the procedure of sending the patient to an institution and the stigma it involves. Besides, it is the "man behind the gun" who counts after all.

Longing to put an end to his life, having tried to drown himself and taken laudanum, a farmer's son, aged 24, was sent to a sanitarium. Toward the end of his stay of seven weeks, he crushed and swallowed an electric light globe. He was removed, and immediately drank laudanum again. He was then brought to Dr. Hooe in Washington, who placed him in a general hospital and called a neurologist, who at once began to analyze into the cause of the lad's impulse to kill himself. Less than two hours sufficed to ascertain the cause, which was, in short, that he felt dispirited, and hence ill all the time, because of nagging of the family and others. Too shy to assert himself, he had for a year sunk into solitary dullness, which made him a laughing stock. The result was that the least correction or even suggestion about farm work would be taken as an insult. On one occasion, for example, a neighboring farmer, who wished him to plant the corn differently, was believed by his mother, though the patient knew the neighbor was quite wrong, and he felt all the time he was disregarded or put upon unjustly. His own sheepish attitude, of course, encouraged others to treat him in this way. He once left home to escape from this and worked in California, but did not make a success.

Stated briefly, the condition of his attitude toward the surroundings was his own shame at his erotic fancies and masturbation, which he feared would injure his mind, as other boys teased him about it. The result was that he became ultrascrupulous and intolerant of other boys, which led to the solitude which aggravated his tendencies. He believed now that something was wrong with his brain; but he felt that if he could be cured he would be contented to live.

On this basis, a full explanation was made of the harmlessness of his onanism; the mechanism of his difficulties was explained, and means for overcoming them were outlined. As a result, he went home within two weeks and is now working cheerfully on his mother's farm and even mixing in society, his family having been instructed how to help him instead of harming him, as they had previously done.

The conclusion of the whole matter is: Observe and analyze before treating, especially in neurology, where the pitfalls are so many.

Cyclopedia of Current General Literature

Acne Keloid, Etiology and Treatment of.—The author reports findings, in a careful histologic study of 2 cases, tending to support the early views of Kaposi that the disease is a chronic inflammation and connective-tissue new formation leading by pressure to atrophy of the hair-follicles, sebaceous and sweat-glands, possibly of microbic origin, but not occurring as a reaction to ordinary pus cocci. The most striking known etiologic factor is friction by the collar edge. A combined microbic and traumatic origin seems probable. Microbic infection may or may not be through the follicles, but it is probably neither the acne bacillus nor the *Staphylococcus pyogenes* that is responsible, and the disease is unrelated to acne or sycosis. Neither is it a true keloid.

A notable feature of the disease is its obstinacy to treatment. Most success is obtained with the X-rays, but repeated and large doses are required to produce any impression upon lesions of long standing, so that it is necessary to shield the normal skin when applying the rays to the keloidal swelling. In early cases small, isolated nodules may be excised, and they do not recur if the incision is free of the sharply circumscribed sclerotic mass which constitutes the nodule. H. G. Adamson (British Journal of Dermatology, March, 1914).

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Acne, Treatment of.—The author commends sulphur as the best means for keeping the bowels open in these cases. He usually orders equal parts of precipitated sulphur and sugar of milk; the patient is to swallow several times a day as much as will be held on the tip of a penknife. From long experience the author has become convinced that the sulphur, besides stimulating peristalsis, checks putrefaction in the bowels and thus removes the autointoxication maintaining the irritation in the sebaceous glands. He also regards sulphur as the most effective local measure and has the pustules painted at night with a mixture of 10 parts of sulphur, 25 parts of alcohol, and 5 parts of glycerin.

A course of treatment for moderately severe acne should include two or three weeks of general measures, sulphur applied locally and taken internally to regulate the bowels, and dieting—avoiding meat, eggs, cheese, and sugar. The tendency to constipation is frequently not suspected by the patient. Then the author gives a ten- to fourteen- day course of Röntgen-ray exposures, one-third or one-fourth erythem doses being applied at 6 or 8 sittings, to a total of one and a half erythem doses. Four or five weeks after the close of this course he applies the mercury quartz lamp for twenty or twenty-five minutes. Under the inflammation thus induced the skin peels off, the follicle plugs protruding from its inner surface. The skin must be carefully protected for eight or ten days and then carefully gone over with the comedo extractor and auger, any red spots left being treated with sulphur. Three or four weeks of this complete the treatment.

Kromayer (Deutsche medizinische Wochenschrift, October 9, 1913).

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Alopecia Areata, Treatment of.—Stimulating and antiparasitic remedies give the best chance of success in this affection, and in early cases there is a fair prospect of arresting the disease. The hair obtains its nutrition from the papilla, and the difficulty of reaching the deeper parts of the hair-follicle by external application must be borne in mind. The best remedies are probably those which keep the skin of the patch in a state of slight permanent irrigation, and this object may be obtained by the daily application of moderately strong irritants, such as tincture of iodine, lactic acid, acetic acid, chrysarobin, sulphur and mercurial ointments. The author has found (1) the B. P. unguentum hydrargyri iodidi rubri (diluted from 4 to 2 per cent.); (2) the unguentum hydrargyri oxidi rubri, with acetum cantharidis, ℥j to ℥j, and (3) equal parts of sodium chloride and petrolatum—used for the treatment of ringworm—serviceable for their antiseptic and stimulating properties. Blistering fluids may be used in the early stages, and the application of pure phenol, as recommended by Bulkley, has often given the writer good results. Any possible cause of peripheral nervous irritation, such as carious teeth, errors of refraction, or aural defects, should be investigated. Internally iron and strychnine, or the glycerophosphates or phosphoric acid, as recommended by Sabouraud, may be given. In severe cases pilocarpine nitrate injected into the scalp every week or fortnight, in doses of $\frac{1}{10}$ to $\frac{1}{6}$ grain, sometimes has a beneficial effect. The patient must be kept in a recumbent posture for some time after the injection. The high-frequency current is serviceable in obstinate cases, and the ultraviolet rays, as obtained from the Finsen or Kromayer lamps, are also worth a trial. When other means have failed, epilation doses of X-rays are sometimes followed by a regrowth of the hair. S. Ernest Dore (Clinical Journal, January 21, 1914).

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Bismuth Paste as a Primary Dressing for Skin Grafts.—An ideal dressing for Thiersch skin grafts should satisfy certain requirements, viz.: 1. Secure splinting of the graft to its new bed. 2. Elimination of surface exudation or its rapid removal. 3. Stimulation of epithelial proliferation. 4. Comfort. The more popular forms of dressings — rubber tissue, dry gauze, etc.—satisfy some of these qualifications, but each has objectionable features which nullify, to a great extent, its advantages. The author describes a dressing which has given such complete satisfaction for over two years that he now depends upon it entirely.

On the night before the operation of skin grafting the thighs are thoroughly cleansed and dressed with sterile towels. Under the anesthetic the wounded area and the thighs should again be cleansed with very hot salt solution. The exuberant granulations are now removed with a dull curette or the surface freshened by vigorous rubbing with dry gauze until there is free bleeding. The area is then covered with a towel wrung out of very hot salt solution. This is kept in place, to be removed only as the grafts are transferred from the thigh. These grafts should be so thin

as to be translucent. The tendency to cut them too thick may be partially obviated by using a regular heavy skin-graft razor, which is flat on the under surface and concave on the upper. By a quick, sawing motion the desired graft is removed, leaving an area dotted with pinpoint bleeding, which will heal promptly and does not incapacitate the leg. The grafts thus obtained are laid evenly upon the granulating surface, underlying blood and air bubbles being carefully removed, and then pressed firmly into place by means of a gauze sponge wrung out of hot salt solution. The dressing is then prepared and applied in the following manner:—

Strips of gauze, 6 to 8 layers in thickness, are thoroughly impregnated and buttered with sterile 33⅓ per cent. bismuth paste (Beck's paste). These are laid directly over the newly implanted grafts, smoothly and in order, extending for 2 or more inches beyond the area of the wound. No wrinkles or folds should be permitted to remain. Over these there is placed a layer of absorbent cotton, and the whole dressing held firmly in place by a roller bandage.

The first dressing should be done on the fifth day and at this time, especially, does success depend upon the skill and care exercised in the removal of the primary dressing. A similar dressing is reapplied and subsequent dressings done on every third or fourth day as the case requires. At about the fifth dressing one is able to peel from each graft a thin film of dead cuticle, leaving a firm, pink, healthy graft in position.

The advantages of this dressing are that the grafts are held firmly in place; exudation becomes almost negligible; there is stimulation of proliferation of the epithelium, not only from the edges, but also from the deeper surface, that exceeds by far the effects produced by scarlet red, and, lastly, the patient expresses a sense of comfort frequently absent in the other types. The resultant scar is soft and pliable, and shows no tendency to break down.

The action of bismuth paste, when used in the treatment of large granulating surfaces, was so noticeably beneficial that the author has used it as a routine measure in all granulating wounds. It is used as a primary dressing in burns when it is not possible to follow Rovsing's method, and always as a secondary dressing. F. H. Coerr (American Journal of Surgery, February, 1914).

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Cancer of the Breast, End-results in Operations for.—Review of the results of 609 cases of cancer of the breast operated upon at the Mayo Clinic from 1902 to 1912. Of these cases 607 were females and 2 males. Of the 609 cases, the authors were able to trace and have accurate knowledge of 514. Of these, 248 were known to be alive from two years to eleven years and four months after operation. Thirty-seven of these were known to have recurrences. There was a percentage of 32.5 alive without recurrences more than ten years; 39.8 alive more than five years, and 44.7 living more than three years.

Excision of the tumor or a part of the breast, followed by a radical operation within a few days or weeks, does not always mean a bad prognosis. In one case the radical operation was not performed until seven-

teen days after removal of a breast for supposed mastitis, and this patient was living without signs of recurrence seven years and nine months after operation; in another a specimen had been removed one week before the patient came to the clinic, a radical operation was done, and the patient was alive and free from recurrence over six years after operation. Edema in the tissues is considered a contra-indication to operation. Cancer in the lactating breast proved most unfavorable.

On the whole, the functional results were very good, most of the patients reporting that their arms were all right. Pain in the arm was usually complained of shortly after operation, but in most of the cases it disappeared within two weeks. Swelling and edema were occasionally marked, either primarily due to thorough removal of the lymphatics, and persisting until collateral circulation in the lymphatics was established, or as a secondary edema several months or years after operation, and due to a recurrence in the remaining lymphatics. Metastasis may occur many years after the operation, though in the great majority of instances it will appear in the first few years, if at all. The difference between the percentage of patients living more than three to five and ten years was not as great as might have been expected; this is because most patients who die of the disease die within the first three, or at least the first five years. Living five years without recurrence is an indication of but slight trouble in the future.

Comparing the results with those of former years, the authors feel that the results are improving. The improvement seems due to the fact that patients are coming earlier rather than to any improvement or change in the technique. E. S. Judd and W. E. Sistrunk (Surgery, Gynecology, and Obstetrics, March, 1914).

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Determining the Size of the Cervix by External Examination.—The author's method is based upon the palpation of the contraction ring, which, according to his experience, can always be felt. It is felt two fingers above the symphysis when the cervix is of the size of a dollar, and three fingers above the symphysis when it is somewhat larger. When the cervix is fully dilated the ring can be palpated four fingers above the symphysis and is always horizontal, not oblique, as it is when the lower uterine segment is overdistended. F. Unterberger, Jr. (Zentralblatt für Gynäkologie, January 24, 1914).

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External Malleolus, Treatment of Fractures of.—The excision of small fragments of bone involving articular surfaces has given the author such good results in the case of the shoulder, elbow, and wrist-joints that he determined to try it in cases of fracture of the external malleolus. Among the cases presented is that of a woman aged 40 with an oblique fracture of the fibula involving the malleolus. In spite of careful adjustment of the splints the patient complained of great pain, which continued for several days. On the tenth day after the accident the author exposed the external malleolus by a rectangular incision and, after detaching the external lateral ligament, removed the whole of the external malleolus. The foot was placed at a right angle to

the leg and adjusted on a back splint. Next day the patient was comfortable and free from pain. In ten days the wound healed; on the twelfth day she could stand on the foot without pain, and on the fifteenth day went to a convalescent home. Three months later the patient could walk and move about on the injured foot easily, safely, and without pain or stiffness.

This and other cases are good examples of the ease and rapidity with which patients recover after excision of an external malleolus detached by accident. The results are much better than those obtained by the older method of rest or the application of splints, and far better than the repair which follows the newer method of wiring. Sir John Bland-Sutton (Lancet, February 7, 1914).

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Femur, Treatment of Fracture of Neck of.—The difficulty of treating fractures of the neck of the femur is in controlling the short fragment. The author asserts that the method advocated in his paper brings the fragments into apposition and secures bony union in a large majority of cases where the old methods are so uniformly followed by failure.

The principle of the method is that by adding a side pull to the Buck extension the resultant of the two pulls is a pull outward in the long axis of the neck of the femur. This renders the capsule of the joint taut and brings the fragments into apposition. The side pull is brought to bear upon the upper end of the thigh by means of a weight and pulley, the pulley being placed opposite the crest of the ilium of the injured side. It can be attached to the wall, a standard, or the side of the bed, and should be so adjusted that the pull is upward and outward at an angle of 45 degrees. The amount of weight at the foot of the bed should be sufficient to overcome the shortening, and the side weight should be about one-third of the foot weight. The author has depended upon the apparatus to adjust the fracture, but the advice of Ruth seems rational. He recommends that the thigh be flexed to a right angle with the body, with the patient on his back; that extension be made directly upward while an assistant makes outward traction upon the upper end of the thigh, and that while both pulls are continued the limb is brought down parallel with the other leg and held in that position until the dressings are applied.

A well-padded splint of surgeon's felt, or sole leather, should be applied to the inner and under sides of the thigh, coming well up to the perineum. This splint is fastened to the thigh by adhesive plaster encircling the limb, and affords a broad surface against which the side pull can be made without chafing or blistering. By means of the side pull the natural tendency to eversion can be overcome. The author finds a band made of several layers of gauze or cheesecloth a convenient material for the side pull. It should be fastened to the splint by adhesive plaster, so that it will not roll up into a cord against the perineum. To the ends of the gauze is attached a rope which goes over the pulley. By shortening the lower arm of this gauze the limb can be rotated inward, thus avoiding the danger of eversion.

One of the advantages of this treatment is that the surgeon can

slip his hand under the knee and flex it a little every day and thus prevent ankylosis. The patient can be allowed, and should be encouraged, to sit up in bed. This can be done without causing pain or disturbing the fracture, because the head of the bone rotates in the acetabulum. The sitting posture adds to the comfort and convenience of the patient and prevents hypostatic pneumonia.

While it is useless to claim that this or any other treatment will procure bony union in every case, since there are persons who have not the required bone-producing power, the author has had but one case, thus treated, in which union failed to occur.

The method described is, of course, not the only one by which bony union of the femoral neck can be secured. Whitman's method of extreme abduction and retention by plaster of Paris will secure bony union, and is undoubtedly the best method for the treatment of children, but it is neither as comfortable nor as convenient as the recommended method for adults. James E. Moore (Old Dominion Journal of Medicine and Surgery, March, 1914).

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Glaucoma, Treatment of.—In an acute or subacute attack of inflammatory glaucoma the local treatment should consist of pilocarpine, 2 grains to the ounce, to be used every hour, preceded by as hot a fomentation over the eye as the patient can bear for fifteen minutes. Leeches to the temples are sometimes used, and generally with good effect. Counter-irritation over the brow and temple are equally serviceable. To relieve the trigeminal neuralgia, acetanilide or phenacetin, 4 grains, with codeine sulphate, ¼ grain, may be used every two to three hours. A course of calomel is invariably indicated, to be followed by sodium salicylate, 5 grains, or quinine, iron, and strychnine, three times a day. A good sweat is often of great help. If after twenty-four hours the pain is lessened and the sight is no worse or has improved somewhat, the treatment may be continued until the eye has quieted down partially or completely, when operation will be in order. If, on the other hand, the symptoms are in no wise abated in twenty-four to thirty-six hours, immediate operation is demanded. The ophthalmic surgeon will have to determine whether this shall be the classic iridectomy or one of the modern filtration operations. In absolute glaucoma enucleation has been generally advised, but it is the author's feeling that nearly every one of these eyes may be preserved to the patient (sightless, it is true) by sclerocorneal trephining.

Chronic non-inflammatory glaucoma is a field into which the general medical practitioner has not entered as he should. The bowel, kidneys, and skin should be alternately stimulated, the results being controlled by study of the indican, urobilin, and conjugate sulphates of the urine. The blood-pressure is often significantly increased and is also one of the controls in this study. Diet, exercise, outdoor life,—in a word, rational living,—count for much.

As to the treatment of the eye itself, so long as a patient under thoroughgoing elimination and miotics in the eye can maintain a useful degree of vision without increase of intraocular tension or cupping of the optic nerve head and reduction of the visual

fields, one should be slow to recommend operation. But if in spite of such general and local treatment, the vision continues to fall off to a point where reading of good-sized print becomes impossible and the visual field suffers, with deepening of the nerve cup, one should earnestly urge operation. Sclerocorneal trephining is the best procedure.

As to the proper method of miotic medication: Beginning with 1 grain to the ounce of pilocarpine and ½ grain to the ounce of eserine, the pilocarpine should be used three times during the day and the eserine at bedtime. From time to time the strength of the miotic is increased, enough being used to keep the pupils well contracted. The solutions should be freshly prepared, at least once in two weeks, and filtered each time. The patient is cautioned to keep the dropper clean lest the solution become contaminated. Ocular massage is sometimes of great help.

If the patients will submit to thorough elimination and conscientiously adhere to the miotic treatment, they may often escape operation for many years and sometimes altogether.

As to the operation to be performed for non-inflammatory glaucoma, when such a step has been consented to, one has come to look upon iridectomy with much doubt in recent years, and the modern filtration operations are being given thorough trial. One has a choice of Herbert's or La Grange's modification of sclerotomy, of Heine's cyclodialysis, or of Elliot's sclerocorneal trephining. The latter is by far the safest and most productive of results. In 29 cases treated by this method there were no serious complications at the time of operation in any case. By the trephining method 7 eyes with absolute glaucoma have been preserved to their possessors that formerly would have been removed. In 7 other eyes which were sightly a small degree of vision was gained by the operation, such as hand movements at 1 to 3 feet. In the remaining 15 eyes the results were good, in that the eyes gained considerably in vision and usefulness. The greatest gain in vision after trephining was from $\frac{3}{50}$ to $\frac{6}{12}$, and the least from $\frac{5}{12}$ to $\frac{5}{10}$. Wendell Reber (New York Medical Journal, February 21, 1914).

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Infantile Gastroenteritis, Bacillus Lactis Bulgaricus in.—The results obtained by Clock in the vomiting and diarrheas of babies by the administration of the *Bacillus lactis bulgaricus* in tablet form led the author to try the treatment in a series of 55 cases. These cases varied in severity from moderate degrees of infection—6 stools a day—to the most grave—20 and more passages. The diarrheas had been present from one day up to a month or more. From 3 to 10 lactic bacillary tablets a day were given to each infant, according to the gravity of the illness.

Of the 55 cases 16 were breast babies, 32 bottle, and 7 breast and bottle. In 33 there was diarrhea, but no vomiting; in 20 there were both vomiting and diarrhea, and vomiting was present alone in 2 cases. The stools were generally green, watery, or curdy, foul, slimy and in a few cases blood-stained. Some of the patients received no treatment other than the tablets. Seventeen received an initial purge of calomel and castor oil and were kept on barley water for

a time. Saline irrigations were used in 27 cases and bismuth in small doses given with the tablets in 13 cases.

The results obtained were as follows: 43 of the children gained in weight; 2 lost; 3 gained and then later lost, and 7 showed no change. There were no deaths. The temperature regularly came down to the normal within one to three days, except in a few cases in which there was an associated condition such as a bronchopneumonia. Within two or three days after the tablets were used, the stools became yellowish or brown, well-formed, free from curds, mucus, and blood. The number of stools sometimes decreased and sometimes remained unchanged. In the latter case bismuth subnitrate in tablet form was given in addition to the lactic tablets, with resulting marked decrease in the frequency of the passages. Louis H. Schwartz (Medical Record, January 24, 1914).

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Iodine Applications in Diphtheria.—Iodine ointment was used by the author in 30 cases of diphtheria and 19 of scarlet fever, as well as in 10 other cases of septic throat of varying origin and degree. He employed 3 cotton pledgets, 2 to remove secretions and false membrane and dry the surface as far as possible, and the third, well smeared with the ointment, to be rubbed on the affected surface and the surrounding area. This was done every three hours, or in severe cases every two hours, until improvement occurred. Under this treatment many cases of diphtheria cleared up within a few hours, becoming quite free from false membrane on the second or third day. The septic cases also promptly recovered, and the scarlet fever cases were unusually free from local complications. The treatment is advantageous, especially in children, in being in no way unpleasant to the patient. A. Harrison Thomas (British Medical Journal, January 10, 1914).

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Jackson's Pericolic Membrane.—Jackson's pericolic membrane is of congenital origin and is non-inflammatory. It occurs in association with abnormal mobility of the proximal colon, due to a failure of fusion of the ascending mesocolon with the posterior parietal peritoneum. The great omentum, from which Jackson's membrane is derived, is the most primitive agent in fixing the proximal colon to the parietes in the right loin. In cases of mobile proximal colon Jackson's membrane may be the principal means of fixing the colon. Unless it causes kinking of the colon a pericolic membrane is therefore rather useful than harmful, and should not be divided. The symptoms and pathologic conditions found in association with Jackson's membrane (apart from mechanical obstruction due to the membrane) are primarily due to stasis in the abnormally mobile proximal colon, which is ill adapted to the upright posture. Surgical treatment should be directed to securing the normal position and fixation of the proximal colon by the operation of colopexy. John Morley (Lancet, December 13, 1913).

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Localized Tenderness in Surgical Affections.—In estimating the condition of localized tenderness in surgery, there is a very simple procedure

by which these examinations may be made to elicit very much more definite information than can be had by the usual pressure of the hands or the fingers. All that is required is a common lead pencil with a rubber eraser at the end. The examination is made by placing the pencil perpendicular to the part to be examined, with the rubber end in contact with the skin, when, after gaining the patient's confidence and co-operation in announcing the degree of pain on pressure, the pencil is firmly pressed down upon the point of contact. A point ¼ or ½ inch from this spot is next examined with the same amount of pressure, and the comparative degree of tenderness elicited is noted. This is repeated at various points, covering, in a more or less symmetric manner, the entire area of the sensitive region. The distinctness with which the outlines of a true surgical local tenderness can be mapped out and limited by this method is a revelation to those who have never applied the test. For example, a tenderness in appendicitis which by palpation is located over an area of, say, 2 by 4 inches may, by this means, be distinctly localized to an area of about 1 by 2 inches. Not only are the limits of the pathologic condition thus more clearly defined, but the contrast between the sensitive and the normal areas is very much accentuated. In other words, the sum total of the tenderness found on palpation always consists, to a certain extent and sometimes to a large extent, of the pain induced by the displacement or the crowding of the surrounding organs or tissues against the point of disease, or of the sensitiveness due to the manipulation of the overlying soft parts. The tenderness from these factors is reduced to a minimum in the examination by this method. If a contused extremity be grasped and squeezed in the full hand, considerable pain will be induced, whereas local pressure of the pencil, even though it be sunk deeply into the contused area, will, on account of the absence of the tissue crowding, produce practically no pain. If, however, in pressing over a contused area, the pencil comes down upon the line of a fracture of a bone, or upon the point of rupture of a ligament, very decided and definitely localized tenderness will be evident.

The practical application of this "pencil-tenderness examination" finds its most valuable use in the early detection of appendicitis, at the time when it is most important and most difficult to differentiate a simple bowel disturbance from a beginning appendicitis. The indefinite sensitiveness here, under the pencil test, seems to disappear in the former case, and to become concentrated at the appendix in the latter.

Not only is the detection of doubtful fractures greatly facilitated, but the actual line of the fracture can often be very clearly demonstrated by this test. For fractures of the small or the superficial bones it is desirable to cut the rubber end into a flattened edge for more definite localization. The differentiation between a ruptured ligament and a simple strain of a joint is usually very evident on the application of the test, as is also the differentiation of simple contusions of the scalp from those accompanied with fracture of the skull. Roland Hazen (American Journal of Surgery, February, 1914)

Maxillary Antrum, Diagnosis of Disease of.—Among the aids to diagnosis of disease of the antrum of Highmore, one of the most valuable is the use of some form of suction apparatus. The nose should first be well cleared out with some alkaline solution, and then sprayed with cocaine and epinephrin until all the parts, particularly the region of the middle turbinate, can be well seen. Sometimes a drop of pus can be observed exuding from the natural opening of the antrum, but in the majority of instances the nose appears wholly clean. In the nostril of the diseased side then is applied a suitable nasal tip leading into a suction bottle—the latter connected with an ordinary filter pump attached to a spigot—and suction begun and increased until the patient feels a sensation of drawing within his nose. The process can often be assisted by having the patient swallow, when the soft palate will be brought into contact with the posterior pharyngeal wall. The suction is to be kept up for four or five minutes even if there is no drainage into the bottle. Often on examination one can see the pus coming from one of the natural openings of the sinus. Sometimes treatment of this kind, if the opening remains patent, is sufficient to cure the condition without any operative interference. Harold Hays (American Medicine, March, 1914).

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Os Calcis, Sprain Fracture of.—Fracture of the os calcis may occur by direct or indirect violence. In the former event, there exists what has been called a compression fracture. The subject usually has fallen from a great height and landed on his heels. The os calcis is fixed between the malleoli, the astragalus, and the ground. The energy of the fall is expended directly at the point of fixation, the fracture resulting. Frequently the bone is broken into more than two fragments, or shows extensive comminution. In the fractures due to direct violence, the avulsion type of fracture, the same fixation occurs, but in attempting to prevent the injury, at the moment of falling the patient unconsciously contracts his calf muscles so powerfully that the posterosuperior portion of the os calcis is torn away. In some cases the bone is stronger than the tendo Achillis, and the tendo Achillis itself is ruptured. This is much the more uncommon lesion. The case reported by the author could neither be considered as a fracture of the os calcis nor as a ruptured tendo Achillis, but as a lesion intermediate between the two, the tendo Achillis together with a thin bony segment having been torn from its attachment to the os calcis. A. O. Wilensky (Medical Record, March 7, 1914).

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Pulmonary Tuberculosis, Guaiacol in.—The author considers that abandonment of the use of guaiacol in lung tuberculosis was unjustified. He states that: (1) It was not given in large enough doses; (2) it was not continued for a sufficiently long period; (3) it may not have been possible to administer the drug regularly. Intervals of only a few days in its administration have a prejudicial effect on its action. It is necessary to give large doses. Beginning with doses of 5 minims (0.3 c.c.) three times daily, he increases the dose by

2 minims (0.12 c.c.) a week up to 12 or 15 minims (0.75 to 1 c.c.), and continues the drug for four months or longer, obtaining highly satisfactory results therefrom. The drug being taken immediately before food, no digestive disturbance resulted from the long-continued use of these large doses. The following formula was used:—

℞ Guaiacolis, f℥j (4 c.c.).
Alcoholis,
Syrupi limonis, āā f℥j (30 c.c.).
Spiritus chloroformi, f℥ij (8 c.c.).
Aquæ, q. s. ad f℥vj (180 c.c.).
M. Sig.: One-half ounce three times daily.

Detailed histories of 5 of the cases thus treated are given. The treatment is recommended to practitioners for trial. G. E. Mayberry (British Medical Journal, January 10, 1914).

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Pulmonary Tuberculosis, Radiography in the Diagnosis of.—The gross lesions of pulmonary tuberculosis give a characteristic appearance in the radiograph. The diagnosis of pulmonary tuberculosis by the radiograph must be based on the localization of definite areas of increased density. In the vast majority of cases the radiograph will demonstrate any lesion that the physical examination will reveal. It will demonstrate much more accurately the extent of involvement than any other diagnostic agent. In determining the operability of a surgical condition in a patient suffering also with pulmonary tuberculosis or in giving a prognosis in a known case of pulmonary tuberculosis, the radiographic examination is essential. In border-line cases the Röntgen ray cannot determine the activity of a tuberculous process. No conclusions can be drawn from the shadow of the hilus in the adult. Malpositions and distortions of the shadows of the diaphragm or heart are rare except in cases of pulmonary tuberculosis of long standing, and little or no significance should be attached to them. A. B. Moore (Interstate Medical Journal, March, 1914).

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Pyloric Spasm, Treatment of.—As regards the treatment aimed at the immediate and direct relaxation of the spasm, but few remedies are as yet known that act especially upon the vagotonic fibers of the pneumogastric to induce relaxation. Among the agents that may be used rather specifically is atropine, given in full doses. This drug, in a certain proportion of cases, cuts out the vagotonic element in the pyloric spasm and relieves the condition as by magic. Another agent which the author has been led to try experimentally, and in a number of cases with remarkably satisfactory results, is epinephrin. Physiologists have found in animal experiments that epinephrin brings about an instantaneous although rather brief relaxation of the stomach, making it for the time being atonic, except that it seems not to affect to the same degree the sphincters of the pylorus and cardia. Notwithstanding this exception, the author tried epinephrin hypodermically in a case of painful pyloric spasm; the relief was prompt, and, somewhat to his surprise, lasting. Since then he has repeated the trial in several cases; the measure did not uniformly succeed, but in most, and

these the most characteristic, it gave complete relief. In two the spastic pylorus was palpable and the tumor could be felt to melt away under the hand in a most gratifying manner, the symptoms coincidently disappearing. The author also refers to the happy effect of prolonged gastric lavage, using water at a temperature of 105° F., in relieving spasmodic conditions of the stomach. C. G. Stockton (Canadian Medical Association Journal, December, 1913).

* * *

Renal Function, Simple Method of Testing.—The author calls attention to the ease with which the renal function may be tested with phenolsulphonephthalein by noting the time of the appearance of the dye in the urine after injection, and the duration of its presence there. In his method the patient first drinks 2 glasses of water, after which 1 c.c. of a solution containing 6 mg. of phenolsulphonephthalein is injected into the lumbar muscles. The urine is passed or drawn into a vessel containing an alkaline solution every five minutes after the injection until the distinctive color of the dye is observed, and every hour afterward, counting from the time of the injection, until the color is no longer present in the urine.

Four numbered bottles are provided in which these specimens are placed for later examination, when their contents must be made alkaline, if not already so, by the addition of sodium hydroxide solution.

In normal cases the dye should appear in the urine in from five to ten minutes. By the end of the second hour about 80 per cent. should be excreted, leaving only 20 per cent., which is usually excreted within the third hour. The bottles of urine should therefore be colored as follows: 1 and 2, deeply colored; 3, pale; 4, uncolored.

In abnormal cases the first bottle may be pale or uncolored by the dye. The second, third, and fourth bottles may be colored with a pale or a deep tint, depending on the rapidity of excretion. In the severe cases, especially in interstitial nephritis in which uremia is impending, the first bottle may be uncolored urine, the following ones all having the pale tint due to slow excretion.

The principal adverse criticism of this method has been its alleged inaccuracy. There is so much variation, however, in the secretion of normal kidneys that a percentage of 50 per cent. is also pronounced normal. Accurate instrumental measurement (by the colorimeter) is really only necessary when the excretion is very slow. W. A. Frankland (Washington Medical Annals, March, 1914).

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Spasmophilia in Children, Treatment of.—The author recommends a combined treatment of spasmophilia with phosphorized codliver oil and milk curds from which the whey has been removed by washing with water, thus removing all mineral salts. He gives histories and tables for 12 cases in which a cure was obtained by this method—in 9 within a week, twice at the end of the second, and once in the fourth week. The electrical reaction returned to normal. There was loss of weight under this diet, but this was never so great as to be alarming, and it was soon compensated for on

return to the full milk diet. Bernheim-Karrer (Monatsschrift für Kinderheilkunde, vol. xii, No. 8, 1914).

* * *

Vaccination and Sore Arms.—In spite of precautionary measures, sore arms are still of too frequent occurrence, owing principally to the fact that most physicians simply vaccinate and leave subsequent treatment to the patient. Pustule formation is not an essential of the immunizing process, and it is desirable to prevent pustule formation. Dyer recommends the opening of the vesicle with a pair of sterile scissors, painting the base of the vesicle with a solution of silver nitrate or pure phenol (followed with alcohol), and putting on a sterile dressing. The authors have found that the use of phenol causes a somewhat more severe local reaction and a larger eschar and crust than is desirable. They did not find, as Dyer reports, that it prevents secondary infection, and have tried instead the use of tincture of iodine, applying it to the vesicle as soon as possible after the latter has formed and repeating the application two or three days later. By this method they succeeded in either preventing pustule formation or so limiting it that the several pustules which formed did not coalesce. As a result, the vesicles would soon dry up and form a small, dry scab. In not one of 116 cases so treated was there secondary infection with pus-producing bacteria, whereas in those not so treated about 30 per cent. were secondarily infected. In many of these, to be sure, the pus formation other than that of the pustules of vaccinia was but slight.

The use of tincture of iodine accomplishes, the authors believe, two desirable purposes: 1. It destroys the vaccine virus in the superficial lesion —the vesicle or pustule—and thus prevents any further superficial necrosis. 2. It destroys the pus-producing bacteria which may have gained entrance and thus prevents secondary infection. There is no interference with the immunizing process because: 1. With the iodine treatment, there is no diminution of the reaction, as indicated by redness and swelling of the subcutaneous tissue and by constitutional symptoms. 2. The germicidal action of the iodine is limited to the superficial tissue, probably not extending much below the epithelial cells, whereas the vaccine virus has, no doubt, thoroughly invaded the underlying connective tissue. 3. There is no evidence to indicate that the antibodies which produce immunity are formed by the epithelial cells, but there is much evidence to show that they are produced by other cells of the body which are not destroyed.

According to the method of the authors, when a dry scab has formed with no evidence of pus beneath it, no more iodine is applied. The scab should, however, be kept covered with sterile gauze for several weeks and the patient instructed to return if there is evidence of pus formation. In cases of secondary infection with pus formation best results are obtained by removing the scab and pus, painting the base of the ulcer with tincture of iodine and, when dry, covering it with bismuth subiodide powder. Superfluous granulation tissue is treated with a stick of silver nitrate. Henry Albert and A. M. Alden (Iowa Medical Journal, April, 1914).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

In amenorrhea, relative or absolute, ovarian extract considered best remedy by author. *Bandler.* 91

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Angina Pectoris. TREATMENT. Concussion at level of seventh cervical vertebræ, together with hypodermic injection of 1/10 grain (0.006 Gm.) of pilocarpine, to increase vagus tone, gives relief more promptly than does morphine. *Jarvis.* 160

Ankylostomiasis. TREATMENT. Betanaphthol in 30-grain (2 Gm.) doses given the first thing every morning is likely to prove more effectual than eucalyptus or thymol. Starvation of patient during such treatment is unnecessary; in bad cases it may be harmful. *Keith.* 165

Arthritis, Chronic. TREATMENT. Injections of phenol-camphor used with benefit. Must be made only into joint, never into spongy bone. Formula: Phenol, 30; camphor, 10; alcohol, 30. Only 0.5 or 0.25 c.c. is injected at one point, except in streptococcic processes, where 2 c.c. are necessary. *Pohl.* 235

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchitis, Acute. TREATMENT. Inhalations of recently prepared tincture of iodine from wide-mouthed bottles found to cure bronchial catarrhs in four days. Inspirations —from 4 to 8 or more at each sitting—to be more or less deep according to severity of case. Inhalations to be repeated 5 or 7 times a day. If much mucus, expectoration to be assisted by usual remedies. In children iodine tincture may be dropped on pieces of cotton to be laid on pillow (over oilcloth) while patient sleeping. *Torri.* 303

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing, exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* 55

Burns. TREATMENT. (1) Hypodermic injection of morphine and atropine. (2) Immerse burned area in, or cover with light cloth moistened with, cold water to which has been added 1 teaspoonful of sodium bicarbonate or chloride per quart; continue until morphine effect manifest. (3) Spray or mop burn and surrounding surface with hydrogen dioxide, mop with dry gauze, apply gauze strips dipped in 2 per cent. picric acid solution in dilute alcohol, and cover with thin layer of cotton and adhesive strips or bandage. Allow dressing to remain till soiled, then reapply. (4) About third day, open blisters and mop away contents. (5) Where sloughing: Remove dead tissue as it loosens, cleanse surface with dioxide, dry, mop with picric solution, put on strips of rubber tissue previously kept in 1:1000 mercury bichloride

solution, and cover with picric acid compress and cotton. *Plain.* Page 299

Cancer. DIAGNOSIS. Marked diminution of the area of cardiac dullness in the recumbent posture, as determined by percussion, found in 87 per cent. of 111 cancerous cases and only 16 per cent. of 107 non-cancerous cases. This sign may be present in cancerous cases that show no wasting. When the sign is present, diagnosis of carcinoma should be rejected only after careful consideration. In some cases the sign has appeared early enough to enable successful resection to be carried out. *Gordon.* 234

Cancer, Gastric. DIAGNOSIS. Positive or negative diagnosis made by serial röntgenography in 616 cases. Of 97 cases operated on, diagnosis found absolutely correct in 94. Gastric cancer at any stage, or indurated gastric ulcer, can be detected by this method as accurately as renal calculi or bone fractures. *Cole.* 301

Cellulitis. TREATMENT. Packing infected arm from fingers to shoulders in hot mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection promptly. *Freese.* 304

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Corneal Ulcer. TREATMENT. Bathing part with 1 per cent. ethyl hydrocupreine solution for one-half minute every hour, six hours first day and twelve on next, found rapidly effectual in a case of ulcus serpens with hypopyon from chronic dacryocystitis. Sac expressed and conjunctiva cleansed with boric acid before each treatment with ethyl hydrocupreine, which was dropped on the ulcer. Practically specific against pneumococcic infections. *Wiener.* 168

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solution. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delirium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* 110

Diabetes Insipidus. TREATMENT. Case in which injections of pituitrin caused marked, though but temporary, inprovement. *Farini.* 277

Diabetes Mellitus. DIAGNOSIS. Frommer's test recommended for detection of small amounts of acetone. Treat about 10 c.c. of urine with 1 Gm. of sodium hydroxide in substance and without waiting for it to dissolve; add 10 or 12 drops of a 10 per cent. solution of salicylaldehyde in absolute alcohol. Heat to 70° C. In the presence of acetone, marked purple-red color develops at zone of contact with alkali. This test indicates presence of 0.000001 Gm. of acetone. Urine must be diluted so that its specific gravity is about 1.01. *Muhlberg.* 232

TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.*, of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often causing glycosuria to disappear. *Cornwall.* 110

Dry vegetable diet recommended for cases in a state of acidosis. Patient to take daily 10 ounces (300 Gm.) of dried legumins (peas, beans, lentils), 5 ounces (150 Gm.) of butter, 3 to 6 eggs, and 3 to 6 aleuronat or gluten rolls. Green legumins may also be given. Soy beans may be used. This diet to be followed at least 3 days at a time. The starch it contains is better utilized than that of other foods, glycosuria often being not higher than under a diet poor in carbohydrates. The diet also combats nitrogenous loss; somnolence and anorexia, where present, often disappear, and diaceturia diminishes. *Labbé.* 300

Dysentery, Bacillary. TREATMENT. In acute form: (1) Rest and warm covering; (2) only small amounts of food at a time; (3) calomel at the outset; (4) acid drinks; (5) enemata of saline or soda solution or of methylene blue. In chronic form: (1) Rest; (2) enemata of 1:500 or 1:1000 silver nitrate, 0.25 to 0.5 per cent. tannic acid, 1:500 or 1:1000 thymol, 1 to 2 per cent. resorcinol or creolin, or enemata of gum arabic mixed with bismuth subgallate or iodoform; (3) phenyl salicylate, tannigen, ichthyol, or calomel internally; (4) serum treatment, 10 c.c. in mild cases, 10 c.c. twice at six- to ten- hour interval in medium cases, and 40 to 60 c.c. in severe cases, not exceeding 20 c.c. at a time when serum used daily; (5) appendicostomy or cecostomy with irrigation in severe cases. *Bassler.* 111

Dysmenorrhea. TREATMENT. Cocaine applied to tuberculum septi in nose and anterior portion of inferior turbinate on both sides, followed by application of trichloracetic acid over these spots, in 93 cases. Four applications made between periods. Cases with premenstrual headache, nausea, and colic at onset of flow—but without organic pelvic lesions—completely relieved. Of 81 cases sending subsequent reports, 48 had been cured and 14 improved. *Mayer.* 167

Atropine found very useful, except in cases with high blood-pressure, when pressure must be reduced and cause sought and removed. *Stolper.* 235

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* Page 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* 11

In mild acute cases paint on lesions an aqueous solution of picric acid several times daily; in more severe cases apply wet dressings of the acid, held by facial mask. Prompt and gratifying results. In subacute and chronic types cure hastened by beginning treatment with two or three days' application of picric acid solution. *Wilcox.* 176

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Epilepsy. TREATMENT. Four patients with severe essential epilepsy treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic. Considerable benefit. Dose of fluid injected, 3 to 5 c.c. biweekly or weekly. Improvement striking both as to severity and frequency of attacks. In some, petit mal took place of grand mal. Greatest improvement noticed especially if injected fluid was taken from other patients during recurrent attacks, no matter how slight the latter. *Gordon.* 235

Epistaxis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin brought early relief in 5 cases. *Citelli.* 279

Epithelioma. TREATMENT. Concentrated sunlight, focused on growth with ordinary magnifying glass, found effectual. Useful where X-rays and radium not available. Invariably successful in obstinate recurrent ulcerative patches on face or nose. Focus sunlight on sore for ten or fifteen minutes at a sitting. If scab present, concentrate rays till burning is felt, then lengthen focus to cover wider area. Induce burning again every few minutes. Treat every day or two till scab easily removed, then apply a little cocaine and after three or four minutes apply rays so as almost to cauterize base of ulcer. Alternate with milder applications for fifteen minutes. Under milder treatments thereafter, at longer intervals, cure usually complete in three to six weeks. *Seelye.* 166

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

In facial erysipelas: Have beside bed bowl of boric acid solution in which ice is placed. Keeping cloths frequently moistened with the solution continuously on face effectually relieves pain and burning. Where leg or arm involved: Wet dressings of boric acid or aluminum acetate. In migratory cases: Ichthyol may be applied or surfaces painted with picric acid solution. *Erdman.* 112

Pyramidon used in 20 cases with uniformly favorable results: Diaphoresis, antipyresis, sedation, fading of eruption, which ceases to spread, and improved general condition. Diuretic beverages also given. Locally, following ointment used: Phenolis, camphoræ pulveris, ana gr. xv (1 Gm.); adipis lanæ hydrosi, petrolati, ana ʒss (15 Gm.). *Satre.* 167

Discomfort and pain more rapidly relieved by picric acid solution than other agents, and edema disappears promptly. *Wilcox.* 176

Felon. TREATMENT. Mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection in an unusually short time. *Freese.* 304

Fracture, Ununited. TREATMENT. Osmic acid, 0.02 Gm. in 1 per cent. solution, injected directly into focus in a case of ununited fracture of fibia and fibula, rebellious for six months. Injection repeated 3 times in two weeks. Patient discharged two weeks later. Stimulating action of the acid on periosteum and marrow confirmed in rabbit experiments. *Segrè.* 307

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ʒiiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

Gastric Atony, Acute. TREATMENT. Continuous lavage of stomach through nose recommended. Cocainize nose and work soft oiled tube with 8 to 11 mm. lumen down into stomach. Attach longer tube and carry to receptacle. Amounts up to 5 liters thus drain away. Keep outlet of tube at level of bed to prevent aspiration of mucous membrane. *Grosser.* 305

General Paralysis. TREATMENT. Remissions may be prolonged by suitable doses of tuberculin (1/1000 to 1/5000 mg. of tuberculin residue). *Jackson.* Page 236

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Report of cases improved by administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided among twenty days in each month. *Gaultier.* 90

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1) Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2) grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* 48

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made. *Wolff.* 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomentation applied for five or ten minutes twice, and followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* 50

Hemoptysis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin nearly always brings relief in average cases. Where first injection fails, give a second, and later if necessary a third, the latter intramuscularly. *Citelli.* 279

Hemorrhage, Cerebral. TREATMENT. Venesection used with good results and recommended in cases of apoplexy in full-blooded patients with blood-pressure of 200 mm. or more. Amount of blood let in author's cases, 12 to 48 ounces. Where vein at elbow not easily found in stout persons, there are usually varicose veins in legs which can be opened. *MacFarlane.* 121

Hernia. TREATMENT. Inversion of hernia recommended in patients who take anesthetic poorly and maintain strong expiratory efforts, forcing viscera into sac under pressure. Primary union and cure of hernia in each of author's 7 cases thus dealt with. *Haynes.* 170

Herpes Labialis. TREATMENT. Picric acid solution causes rapid drying of lesion and tends to prevent extension. *Wilcox.* 176

Hodgkin's Disease. TREATMENT. Benzene, 5 minims (0.3 c.c.) three times daily at first, then increased to 10 minims (0.6 c.c.), caused marked regression of enlarged nodes, beginning two weeks after treatment begun, in a case previously treated unsuccessfully with X-rays. The 10-minim dose was continued for six weeks. *Lawson and Thomas.* 173

Hyperchlorhydria. TREATMENT. Cream diet considered useful. (See Ulcer, Gastric.) *Nichols.* Page 169

Following measures recommended: (1) Magnesium oxide, combined with sodium sulphate and belladonna in small amount. (2) All food to be well cooked and most carefully minced. (3) Patient to take 2 or 3 meals at two-hour intervals in forenoon, but nothing after lunch until 7 P.M., when only porridge to be taken. (4) Fluid intake to be generally diminished and restricted to hours when stomach not filled with food. (5) In severe cases, or where gastroptosis: Rest in bed for two or three weeks. (6) Hot compresses twice daily for two hours; cold compresses at night. (7) If hyperacidity arises on basis of a catarrh: Rinse empty stomach in morning with 1 : 1000 salicylic acid or 1 : 500 silver nitrate solution. (8) Bowels to be carefully regulated. *Schmidt.* 302

Hyperthyroidism. TREATMENT. Injection into enlarged thyroid of 1 to 4 per cent. solutions of quinine and urea hydrochloride caused marked improvement in 3 cases. *Watson.* 265

Ileus. TREATMENT. Continuous lavage of stomach through nose recommended in duodenojejunal occlusion, postoperative bowel paralysis, ileus from adhesions, spasmodic contraction from peritonitic reflexes, and vicious circle after gastroenterostomy. (See Gastric Atony, Acute.) *Grosser.* 305

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Infections, Local. TREATMENT. Following summary of serviceable measures present: *A.* Inflammations with slight serum exudation, but with redness, heat, swelling, pain, and loss of function: 1. Rest. 2. Elevation. 3. Hot, wet dressing.—*B.* Where much serum exudation, but slight tendency to necrosis: 1. Incision. 2. Place gauze in wound saturated with Chlumsky's solution. (Camphor, 60 parts; phenol, 30; alcohol, 10.) 3. Wet dressing; keep wet. 4. Remove gauze in twenty-four hours. 5. Insert rubber drain. 6. Apply wet dressing.—*C.* Where marked necrosis: 1. Incision. 2. Drainage. 3. Wet dressing. 4. After inflammation receded, Durante's solution. (Iodine, 1 part; potassium iodide, 10; guaiacol, 5; glycerin, to make 100.) 5. Dry dressing. *Hoag.* 307

Insanity. TREATMENT. Recovery in manic-depressive insanity may be hastened by stimulation of leucocytosis by injection of 1 c.c. of terebene subcutaneously in the flank. *Jackson.* 236

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intertrigo. TREATMENT. Paint picric acid solution on surfaces and separate them with thin layers of absorbent cotton. In the more severely infected cases wet dressings of picric acid. Prompt results. *Wilcox.* 176

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valuable for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Lumbago. TREATMENT. Salicyl compounds or a 10- or 20- grain (0.6 or 1.2 Gm.) dose of quinine at onset of condition useful. Rochelle salts, ½ to 1 dram (2 to 4 Gm.) every hour or two until urine alkaline and bowels freely moved, also valuable. "Walking the lumbago off" may succeed if free perspiration accompanies the exercise. Turkish bath in early stage safer and more effective. Later: Rest, dry cups locally, deep massage, faradic current, and, if salicylates fail, iodine, in vegetable protein combination. *Henry.* 175

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Gold and potassium cyanide injected intravenously in 12 cases. Single dose, 0.01 to 0.05 Gm. Results good. Course of 12 to 14 injections followed by interval of two to three weeks, after which another treatment given. Even in severe cases, therapeutic results better than with tuberculin and other measures. *Poór.* 236

Mammary Abscess. PROPHYLAXIS. Threatened mammary abscess underwent ab-

sorption in 2 or 3 cases soon after administration of pituitary extract. *White.* Page 283

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation; in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Osteomalacia. TREATMENT. Case in which excellent results obtained from epinephrin, injected in doses of 8 minims (0.5 c.c.) of 1:1000 solution, daily, in 2 series of 9 injections each. Patient finally discharged cured. *V. Salis.* 278

Ozena. TREATMENT. Use of sugar recommended. For first week or two surgeon should carry out treatment himself, and precede sugar by removal of crusts from nose, softening them if necessary with hydrogen dioxide or sodium bicarbonate solution. Patient to use nasal syringe once daily. After crust removal, massage mucosa with cotton-tipped probe; then nostrils may be packed with ribbon gauze soaked in simple syrup, to be removed in twelve hours. Repeat this treatment on alternate days. After a fortnight patient can insufflate powdered sugar himself. *Harry.* 175

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Placenta Previa. TREATMENT. In marginal variety, inject 30 minims (2 c.c.) of pituglandol and at once rupture membranes. In central variety, according to extent of dilatation, perform version or introduce metreurynter and give pituglandol. Metreurynter generally expelled spontaneously in one-half hour. Then perform version and give second dose of pituglandol. *Gall.* 280

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.*, daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Vaccine treatment advised. First give polyvalent stock vaccine of pneumococcus and streptococcus, of each, 30 million, as soon as possible. Make sputum smears and cultures, blood-cultures in early cases, lung puncture in late ones, and prepare autogenous vaccine. If no definite response in twenty-four to forty-eight hours, repeat or preferably give autogenous vaccine. If still no response in thirty-six or forty-eight hours, double the dose. If there is response, as shown by improved clinical symptoms and signs, increased well-being, etc., defer reinoculation three days, or until the first symptoms of retrogression in general condition or physical signs occur. Maintain the dosage or increase it every two or three days until the patient entirely well. Generally about three doses are necessary. Average mortality with vaccine treatment only 5 to 10 per cent. Convalescence shortened and danger of complications lessened. In severe cases also give 20 to 30 grains of sodium citrate every two or three hours. *Craig.* 238

Epinephrin, 8 minims (0.5 c.c.) of 1:1000 solution in 1 pint (500 c.c.) of saline solution subcutaneously, caused prompt improvement in a desperate case. *Lonhard.* 281

Poliomyelitis, Acute. DIAGNOSIS. Preparalytic symptom: A peculiar, twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to somewhat less than a minute. Usually affects part or whole of one or more limbs, face, or jaw, but sometimes whole body. Duration of spells short at first. Often accompanied by a cry similar to hydrocephalic, or by brief period of unconsciousness. *Colliver.* 177

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Low nitrogen diet found to have very favorable influence upon psoriasis eruption, especially when extensive. Severe cases improve under such a diet almost to the point of disappearance of the eruption. *Schamberg, Kolmer, Ringer, and Raiziss.* 178

Application of picric acid solution brings immediate and constant relief from itching. *Wilcox.* 176

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will

have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* Page 53

Puerperal Sepsis. TREATMENT. Fixation abscess recommended in this and other severe infectious states, including pneumonia, appendicitis, typhoid fever, etc., whenever condition seems to be taking a turn for the worse. Inject 2 c.c. of pure oil of turpentine under gluteal skin. When abscess forms, evacuate through small incision (do not drain) and apply Bier cups twice daily. Excellent results in 18 cases. *De Lostalot.* 168

Pyorrhea Alveolaris. TREATMENT. Sensitized vaccine against streptococcus, staphylococcus, pneumococcus, and bacillus of Friedländer used in a number of cases. After 2 injections, mechanical and dental treatment added. After 4 or 5 injections, teeth clean and firm, and organisms gone. Three or four supplementary injections given. No recurrence in six months. *Bertrand and Valadier.* 304

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disappeared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* 55

Rachitis. TREATMENT. Pituitary extract given to 16 young children with rickets, and effects compared with controls. After a few weeks of pituitary, the children were able to stand and began to walk; fontanelles began to close and growth of teeth was considerably accelerated. Osseous tenderness gradually diminished, weight was gained, and musculature became firmer. *Weiss.* 218

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intramuscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* 91

Ringworm. TREATMENT. Body ringworm more easily controlled by painting on picric acid solution than by usual antiseptic ointment. *Wilcox.* 176

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Syphilis. DIAGNOSIS. Luetin test valuable as diagnostic measure in tertiary and latent stages of syphilis, indicating a state of hypersensitiveness to spirochetal proteins induced by a period of cessation of introduction of these proteins previous to the test. Provocative injection of salvarsan, followed by both Wassermann and luetin tests, suggested to ascertain whether treatment has been curative in a given case. *Foster.* 179

TREATMENT. Epinephrin, 15 to 20 drops of 1:1000 solution in a little water by mouth, advised ten to fifteen minutes before injection of neosalvarsan, to prevent "nitritoid" symptoms, arising in some patients from the latter, *e.g.,* facial congestion, tingling in throat, nausea, and vomiting. *Galliot.* 212

Tonsillitis, Ulcerative. TREATMENT. After thoroughly washing surfaces and crypts, apply 10 per cent. silver nitrate solution over ulcerated surface and carry down into crypts as well. Then dust thymol iodide with powder blower over gland and throw it into diseased lacunæ. Where tonsils seat of recurring inflammation, but patient objects to removal, use electric cautery. Selecting 3 or 4 crypts at a time, apply 10 per cent. cocaine solution to interior of each with fine-pointed cotton applicator. When anesthesia sufficient, introduce curved electrode into each crypt and turn on sufficient current to produce a white heat before electrode removed. Patients thus treated are freed from further attacks. *Bishop.* 241

Tracheobronchial Glandular Enlargement. DIAGNOSIS. Percussion of thoracic vertebræ, especially those above level of inferior scapular angles, affords tonal changes of clinical value in this condition; these must always be correlated, however, with mural signs in the individual case. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect vertebral percussion sound less, and oftener produce dullness than hyperresonance. *Da Costa, Jr.* 180

Tuberculosis, Articular. TREATMENT. X-rays found useful in bone and joint tuberculosis. Aluminum or thick leather shield to be used. Treatment not to be employed in children less than 5 years old, and in older children epiphyses should preferably be avoided. Best effects noted in cases with sinuses and secondary infection. Part exposed from all sides to an erythema-producing dose; three weeks then allowed to elapse before repetition. Joints healing under the rays show but little limitation of motion. Abscesses with skin about to yield should not be rayed, owing to danger of necrosis. *V. Schede.* 165

Tuberculosis, Laryngeal. TREATMENT. Scarlet red, 10 per cent. in a mixture of equal parts of sesame oil and petrolatum, applied twice daily in cases with laryngeal lesions, whether ulcerative or not. No unpleasant results. Prompt relief of pain in

every case, tendency of ulcerations to heal, hoarseness improved, and, where only infiltrations and edema, swelling markedly less after a few weeks. *Hinman.* Page 306

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

TREATMENT. Frequency of gastric atony and dilatation, with resulting digestive symptoms and secondary toxic manifestations (aches and pains in chest and right hypochondrium, morning depression, insomnia, hepatic weight, vertigo, chilliness an hour after meals, fleeting edema, etc.), in pulmonary tuberculosis pointed out. Treatment: (1) Support to stomach and abdomen by Rose belt of plaster or moleskin, followed, upon improvement, by supporting belt to be worn continuously and later in daytime only. (2) No liquids with meals or for two to two and one-half hours after. (3) Lunch to be light. (4) Recumbency, with attempt to sleep for one-half to one hour after each meal. (5) No alcohol or fresh bread. (6) Medicinal treatment: Tr. nucis vomicæ, acidi hydrochlorici dil., āā f℥ss (15 c.c.); glyceriti pepsini, f℥iss (45 c.c.); aq. menthæ pip., q. s. ad f℥iij (90 c.c.). Teaspoonful in ½ glassful of water after meals. If much flatulence, add chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until relieved. (7) Cold shower or sponge baths, with needle bath to abdomen, followed by brisk rub, each morning. (8) Where mucous passages and flatus: Turkish towels, wrung out in hot water, to be applied to abdomen for one-half hour after meals. (9) Thorough mastication of food and abstention from worrying at meals. (10) Fats to be avoided at first. *F. N. Robinson.* 95

Measures to overcome fever described: (1) Where prolonged fever drains on patient's strength, pyramidon is drug to be preferred—5 grains (0.3 Gm.) in cachet at night, or, if necessary, three times a day. In neurotics bromides sometimes efficacious. (2) Rest in recumbency to be insisted on until temperature does not rise above 99° in men or 99.2° in women, when patient may sit in chair for two hours, then recline on couch, in open air if possible. Exercise then gradually increased. (3) Where severe cough, sedative mixture tends to prevent fever from the exertion and autoinoculation. (4) Where rest and drugs fail, cautious use of tuberculin (T. R. or B. E.), beginning with only $\frac{1}{100000}$ mg., exerts antipyretic action, though often only for short periods. Tuberculin acts best in cases free from fever while at rest, but febrile when exercise taken. *Wethered.* 120

Value of auscultation at acromion process in apical tuberculosis emphasized; it amplifies all auscultatory signs over apices. Of 28 cases in first stage, all showed acromial breathing. *Magida.* 239

Ulcer, Gastric DIAGNOSIS. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* 114

TREATMENT. Cream diet used with success in 26 cases. One quart (4 glasses) a day yields 1800 calories. To this may be added 600 c.c. of milk or 6 slices of bread or 5 tablespoonfuls of oatmeal gruel or 3 eggs. Cream causes inhibition of gastric secretion. If not tolerated in full strength, it may be diluted with equal or greater amount of milk. Ice-cream a useful variant. Some marked cases progressed to good recovery in two or three months under cream diet. Method adapted for bed or ambulant treatment. Also useful as prophylactic against recurrence of ulcer. *Nichols.* 169

Ulcers. TREATMENT. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

Urticaria. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Vomiting. TREATMENT. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Vomiting of Pregnancy. TREATMENT. Apomorphine, $\frac{1}{36}$ grain (0.0018 Gm.) in a teaspoonful of water, found effectual in a severe case; likewise in other cases of vomiting or nausea. *Field.* 182

Thyroidin in 1½-grain (0.1 Gm.) tabloids given in several cases, with complete curative effect. *Koreck.* 284

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1:1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received ⅓ c.c. as initial dose and ⅔ c.c. four days later; others, ½ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a broncho-

pneumonia as complication, a mixed vaccine should be used. *Davidson.* Page 118

Silver nitrate in 2 per cent. solution applied to throat in 95 early cases to prevent spread of infection downward from pharynx. Useful results in 84 instances. Mucus secretion prevented and coughing spells due to irritation by secretion minimized. Silver solution applied every day at first; later, and in older children throughout, on alternate days. *Ochsenius.* 182

Epinephrin, 3 minims (0.2 c.c.) of 1:1000 solution, given every four hours in case in a child 7 years old, ill six weeks. Paroxysms markedly reduced almost at once. Drug then continued 3 times a day for three weeks more. *Lord.* 280

Wounds. TREATMENT. Stream of air from ordinary electric fan or register found useful in drying and promoting healing in large wounds, obstinate leg ulcers, and discharging eczema. *Heisler.* 182

Mixture of saturated magnesium sulphate solution and glycerin in equal parts recommended for dressing infected wounds. *Freese.* 304

Following summary presented: *A. Incised wounds:* 1. Paint with iodine. 2. Shave dry. 3. Tie all bleeding points. 4. Remove foreign substances. 5. Suture all tendons and nerves. 6. Again apply iodine in and around wound. 7. Suture wound. 8. Apply dry sterile dressing.—*B. Lacerated wounds:* 1, 2, 3, 4, 5, same as in *A*. 6. Cut away all damaged tissue. 7. Again apply iodine. 8. Suture wound.—*C. Punctured wounds:* 1, 2, same as in *A*. 3. Enlarge opening for drainage. 4. Insert rubber drain. 5. Alcohol dressing. 6. Tetanus antitoxin.—*D. Gunshot or bullet wounds:* 1, 2, same as in *A*. 3. If much bleeding, enlarge opening and tie vessels. 4. If nerve injured, suture nerve. 5. Close wound. 6. Alcohol dressing. 7. Tetanus antitoxin. *Hoag.* 307

ANNOUNCEMENT.

MEETING OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION.—On June 22d, this Association will meet at the Marlborough-Blenheim Hotel, Atlantic City, N. J., under the presidency of Dr. E. A. Vander Veer, of Albany, N. Y. An unusually attractive programme has been prepared. Among the papers are the following:—

President's Address: E. A. Vander Veer, M.D., Albany, N. Y.

"Relation of the Medical Press to the Cancer Problem," by Mr. Fred'k L. Hoffmann, Statistician of the Prudential Ins. Co., Newark, N. J. (By invitation.)

"The Things that Count in Medical Practice," by H. Edwin Lewis, M.D., New York.

"Ideal National Medical Journal: What It Should Be and What It Should Not Be," by W. J. Robinson, M.D., New York.

"Two Problems of the Organization Journal: the Mediocre Paper and the Editorial Department," by Sarah M. Hobson, M.D., Chicago, Ill.

"Medical Journalism as a Local and as a National Proposition," by Thomas S. Blair, M.D., Harrisburg, Pa.

"Medical Books and Journals," by T. D. Crothers, M.D., Hartford, Conn.

"The Medical Periodical and the Scientific Society," by F. H. Garrison, M.D., Washington, D. C.

"Editorial Experiences," by A. L. Benedict, M.D., Buffalo, N. Y.

"The Special Medical Journal," by A. Bassler, M.D., New York.

"The Medical Profession and Its Influence from a Buying Standpoint," by Joseph MacDonald, Jr., M.D., New York.

"The Preparation of the Original Article and the Editors' Latitude," by E. Franklin Smith, M.D., New York.

"He Among You Who is Without Sin Shall Cast the First Stone," by Erwin Reissmann, M.D., Newark, N. J.

Book Reviews

DIE MALARIA NACH DEN NEUESTEN FORSCHUNGEN. Von Prof. Dr. Angelo Celli, Direktor des hygienischen Institutes der Universität Rom. Zweite deutsche Auflage nach der vierten neubearbeiteten italienischen. Uebersetzt von Anna Fraentzel Celli. Octavo of 294 Pages. With 4 Plates, Partly in Colors, and 121 Text Illustrations. Berlin und Wien: Urban & Schwarzenberg. New York: Rebman Company, 1913. Paper-bound, 16 marks ($4.00).

The first German edition of this book appeared in 1900. Since that time research work upon malaria has been so extensive and productive that a second translation of the modified Italian text became necessary. The work deals, as before, only with the etiology, epidemiology, and prophylaxis of malarial infection, these subjects occupying three successive and

separate parts of the volume. In Part I are taken up in detail the hemosporidia in general, those of lower mammals and man, the various methods of demonstrating the malarial parasites in blood, other diagnostic methods, and the natural history of the mosquito. In Part II are discussed the history of malarial epidemics, the geographic distribution of the disease, the economic losses therefrom, the original sources of malaria, the life of malarial germs outside of the organism, the sources of predisposition and immunity to the disease, the significance of the soil, water, sewage, etc., in this connection, the types of epidemics, etc. In Part III, on prophylaxis, are taken up direct means for destroying the infective agent, means for preventing its invasion of the organism, means directed against the predisposing causes, together with the various measures and rules to be adopted in colonization and home settling. The work closes with an exhaustive table of references to the literature upon malaria in the Roman Campagna. In brief, the work may be said to contain the aggregate of knowledge gleaned from a close study of malaria in the heavily infected districts surrounding Rome, and the conclusions reached on many points cannot fail to prove of interest and value in all lands where the presence of malarial infection indicates the application of preventive measures.

RÖNTGENTIEFENTHERAPIE. Ihre theoretische Grundlagen, ihre praktische Anwendung und ihre klinische Erfolge. Von Prof. Dr. C. J. Gauss und Dr. H. Lembcke, mit einem Vorwort von Prof. Dr. B. Krönig. Octavo of 332 Pages. With 133 Text Illustrations. Berlin und Wien: Urban & Schwarzenberg. New York: Rebman Company, 1912. Paper-bound, 15 marks ($3.75).

In this work is described the progress made by the authors in recent years in the application of the Röntgen rays to the treatment of uterine fibromyoma and other uterine affections associated with hemorrhage. The extensive experimental work of the authors in relation to this subject is also set forth, and special stress laid on the clinical results obtained during the year 1912, these having been, because of improved technique, superior to those previously attained. Prof. Krönig summarizes his views as to the value of the treatment by stating that it renders possible a cure of hemorrhagic metropathies and of fibromyoma in practically all cases without operative intervention and in a short period of time. By an improved method of multiple exposure even 100 per cent. of cures was recently obtained. These assertions are supported by condensed histories of 205 cases, incorporated in the text. Prof. Krönig considers it likely that sarcoma of the uterus will also prove amenable to deep X-ray treatment in heavy dosage.

The theory and technique of this method are discussed at great length—with illustrative diagrams—in this book. Next follows a shorter section on the practical applications of the method, and, finally, an exposition of the results obtained. The book demands attention on the part of all gynecologists, affording, as it does, detailed information on a new procedure for the treatment of one of the commoner pathologic conditions of women.

TREATMENT OF TUBERCULOSIS. By Albert Robin, M.D., Professor of Clinical Therapeutics at the Paris Faculty of Medicine; Member of the Academy of Medicine. Translated by Léon Blanc, M.D., Physician at Aix-les-Bains, etc., with the assistance of H. de Méric, Surgeon to the French Hospital, London. Octavo of 616 Pages. London: J. & A. Churchill, 1913. Cloth, 18/, net.

Professor Robin, in writing on the treatment of tuberculosis, lays stress on some measures likely to evoke some degree of surprise in the minds of most readers, *e.g.*, remineralization; antiseptic inhalations of allyl iodide and of hydrofluosilicic acid; revulsion by means of blisters, dry cupping, cauterization, etc.; antituberculous sera, and the administration of antimony in certain classes of cases. His advice on remineralization is based on estimations of the mineral residue in various organs in normal and tuberculous persons, the latter showing constantly a more or less marked deficiency in inorganic salts. A writer who advances such unusual therapeutic recommendations as are made in this work clearly lays himself open to a demand for clinical evidence in support thereof, and this the present author does not neglect, though the evidence adduced is at times insufficient to carry conviction. The book does not deal exclusively, however, with the author's original therapeutic deductions, but goes in great detail into climatic treatment, hydrotherapeutics, etc. The treatment of acute phthisis, of the various symptoms in chronic phthisis, and of tuberculosis of the digestive tract, peritoneum, genitourinary system, lymph-nodes, bones, joints, nervous system, special sense organs, etc., is rather comprehensively covered. A special part is devoted to the treatment of tuberculosis according to age and according to other morbid conditions associated. The work may, at least, be said to contain a large number of practical suggestions, some of which will doubtless prove of value on trial. The translation is grammatically correct, but the rendering of individual terms is often poor, as illustrated in such French, but not English, expressions as "pulverisations" (spray), "evolutive accidents," "tincture of canella" (cinnamon), etc. Confirmation is afforded the recent assertions of M. Solis-Cohen regarding the minuteness of the doses of tuberculin causing distinct reaction in some cases, Robin citing

a case in which one-billionth of a milligram brought a "far too marked reaction." Robin limits the initial dose in the average case to one hundred millionth of a milligram.

TREATMENT OF NEURASTHENIA. By Dr. Paul Hartenberg, Paris. Translated by Ernest Playfair, M.B., M.R.C.P. Edinburgh, Glasgow, and London: Henry Frowde and Hodder and Stoughton, 1914.

The subject of neurasthenia deserves far more attention from physicians than it receives. Time was when the convenient, picturesquely descriptive term "nerve-weakness" was applied to any and every instance of exhaustion. Then it was used by many to describe vague mental peculiarities. Finally, the neurologists rose and condemned the phrase, or, rather, the indefensible uses of it. Hence it has fallen into undeserved desuetude. The whole group of asthenias is of vast importance, and no thinking clinician can afford to remain in ignorance of their nature and phenomena. None the less, most do. Perhaps they are not to be altogether blamed, because neurologists themselves have done much to confuse the subject. Instances of neurasthenias present to all practitioners, and they require also to get a clear idea of the rarer forms. Dr. Hartenberg is to be congratulated on the concise, forceful manner in which he has presented the subject. The arrangement is ideal, beginning with chapters on (1) *"What is a Neurasthenic?"* (2) *"Why Does One Become a Neurasthenic?"* followed by a particularly good one on (3) *"The Various Psychonervous Affections which are to be Distinguished from Neurasthenia, although Frequently Occurring in Neurasthenics,"* and (4) *"The Manner in which Every Neurasthenic should be Studied and Examined."*

Up to this point there is little but praise to be given. The author is peculiarly fitted to speak on the psychologic aspects of the disorder, having contributed a book on that one department alone. His language is graceful, concise, and illuminating. We cannot do better than to quote here four conclusions:—

1. "One may consider as neurasthenic every individual habitually suffering from *simple nervous depression* (in order to distinguish it from melancholia, in which the depression, when it exists, is always accompanied by marked moral pain).

2. "The symptoms of neurasthenia are expressions of this nervous asthenia, in the bodily domain taking shape as fatigue, motor weakness, sexual frigidity, etc.; in the psychic domain as loss of power of concentration, of memory, of will, of capacity for work, as depression of spirits, boredom, etc.

"To these signs of insufficiency must be added those of irritability which are their corollary: hyperesthesia, headache, rachialgia, exaggerated reflexes, insomnia, hyperemotivity, etc.

3. "One becomes neurasthenic from two varieties of causes. On the one hand, from exciting causes, such as infectious diseases, chronic visceral disorders, digestive disturbances, overwork, and emotions, which have the effect of exhausting or poisoning the nervous system. On the other hand, predisposing causes, inherent in the constitution, whether it be a case of general debility, or of an arthritic autointoxication reacting upon the nervous system, or whether a congenital stigma indicating degeneracy. All these predisposing causes lead to a diminution of resistance on the part of the nervous system which renders it more vulnerable to exciting causes.

4. "Thus understood, neurasthenia must be considered as the exaggeration of a normal property of the nervous system, fatigability."

When it comes to treatment, the author doubtless is successful, especially acting in accord with his "General Rules," from which we quote:—

"It is . . . indispensable that he who wishes to treat a neurasthenic with the greatest chance of success should have at hand the entire therapeutic arsenal necessary to carry out the treatment in its entirety. He must combine the functions of electrician, masseur, doucheur, psychotherapeutist, and general physician,—a judicious specialization consisting not in the employment of a routine treatment, but much rather in the utilization of every treatment for the same class of patients.

"This personal and direct treatment demands frequent, almost daily, contact between patient and physician, a consequence which is not only advantageous but even indispensable. It is in fact necessary that the patient should be subjected without cessation to medical influence throughout every stage of the cure. The therapeutist must always be at hand to superintend its course, to guide its details, to intervene actively every time that some unforeseen event occurs to derange or discourage the patient."

We in America are of the opinion that we can supply these specifications and do better. Weir Mitchell has taught a group of students the mastery of weakness, physical and mental. Some few of Dr. Hartenberg's recommendations we cannot endorse. It is, however, an admirable book, and deserves wide reading.—J. M. T.

The General Field

Conducted by A. G. CRANDALL

Law and Order

For centuries the predominating quality of the popular hero has been his firmness and ability to maintain a consistent course. This characteristic no longer seems to be a popular requirement.

This is an age of new adjustments. Figureheads of popular government no longer determine a fixed policy and adhere to it, but listen expectantly for the latest wave of popular sentiment.

Expatriated citizens from Great Britain frequently express their nausea and disgust at the tolerance by the British Government of such a disorderly element as the militants, who are putting in jeopardy the very stability of the government itself, and in this country there are numerous examples of the same disposition to falter and hesitate in conditions where law and order are involved.

Whatever may be the merits of any great public question, there can be no satisfactory settlement under pressure of the mob, and those who seek disorderly methods of bringing a public question to the front must, by all previous standards of government, be regarded as public enemies.

The most vital and essential quality which should be required of any public official is whether or not he will exhibit a position of firmness when brought into contact with public clamor. This does not, of course, imply that a mayor or governor should be controlled by reactionary influences, but it does mean that, whatever the merits of the question in dispute, all tendency to disorder should be rigorously dealt with.

* * *

One Form of Economy at Least

While this may be an era of extravagance, there is one form of economy which is very manifest.

A medical writer states that twenty years ago the average width of skirts worn by 98 young women was 13 ft. 6 in. This, of course, required a proportionately liberal allowance of underskirts.

Although reckless expenditure is widespread, no one can possibly accuse women of the present day of lavishness in the consumption of cloth. At no time was Spartan simplicity in this respect more conspicuous.

But perhaps the most astounding evidence of all of common sense in woman's clothing is the now widely prevailing fashion of the large, natural waist, and, while the decree of fashion is usually inexorable, it is hardly to be expected that women will ever again consent to make themselves ridiculous by the combination of ultravoluminous skirts and an abnormally constricted waist line.

* * *

Fakes and Fakirs

Thoroughly organized news agencies are able to assemble day by day a varied assortment of depressing tales in which the unsuspecting are victimized by their more crafty associates. This never-ending procession of incidents sometimes leads to very pessi-

mistic conclusions. However, human nature is not materially different from one age to another. Jacob, patriarch of Bible history, pulled off a holdup scheme on his brother Esau that is not frequently surpassed in audacity at the present time. And Jacob in turn was also victimized by his father-in-law, who succeeded in palming off on the contriving Jacob his defective daughter in the place of her sister, for the possession of whom Jacob had served an apprenticeship of seven years.

In recognition of this ineradicable weakness of human nature, there was enunciated centuries ago the oft-quoted rule of commerce: *"Caveat emptor,"* "Let the buyer beware."

The fact that at the present day a more enlightened code of ethics pervades the commercial atmosphere, and an increasing number of transactions are accompanied with the guarantee of satisfaction or money refunded, indicates that fakes and fakers will be gradually eliminated from business life.

* * *

The Iron Constitution

For a century or two it has been the custom among the ignorant populace to speak of a strong man or woman as possessing an "iron constitution." The teachings of physiology show that this was no figment of the imagination.

Owing to the high price of eggs and the commercial methods of preparing wheat flour, the average consumer is not now regarded as getting a square deal in the matter of the physiologic iron intake. It, therefore, becomes necessary that this useful metal be supplied in another form.

Physiologists have agreed that lettuce and spinach provide a maximum amount of iron with a minimum amount of discomfort to the individual. Yet with many, these useful articles of food are not popular. Furthermore, their high price at most seasons of the year stands in the way of their being utilized by the average family.

It is evident that a campaign of education should be begun with a view of popularizing lettuce and spinach and placing them within easier reach of the masses. If there was ever a time when men and women of iron mold were needed, it is at present.

* * *

An Imposition upon the Public

The eagerness with which the metropolitan newspaper seeks for readable copy turns the light of publicity upon many individuals whose personal importance is hardly worth a four-line personal.

A person named Sinclair has had his craving for notoriety altogether too much gratified of late. A great deal that is annoying happens that would not occur if it were not that certain individuals will go to almost any length to see their names headlined in the newspapers.

Whenever a suggestion is made pertaining to a restriction of such sensationalism, the howl immediately goes up of a censored press, which, of course, no one wants; but it seems unfortunate that there should not be a greater sense of responsibility to the public in many a publication office.

Just how a publisher may construe it to be a dignified act to give prominent space to the antics of those whose interest in the causes they advo-

cate would speedily wane but for the advertising they get, is hard to understand.

* * *

Poverty and Opulence Among the Indians

Sunshine and shadow have been conspicuous in the recent history of the American Indian. In the southwest many Indian families have become enormously wealthy through the appreciation of their land allotments; in other sections extreme poverty is the rule, with a concomitant high death rate, largely owing to tuberculosis, the result of bad environment and meager dietary.

The management of the Indian tribes has always been a scandal, largely through the apparent indifference of successive members of Congress who have never seemed to consider it worth while to really inform themselves about the actual conditions.

Medical missionaries are probably as badly needed among American Indians as they are in China or India. The process of adaptation to civilized customs is not a serious problem as compared with numerous other race complications, and the inhabitants of reservations are well worth looking after, even if considered only from the most material motives.

* * *

Treeless Streets

With the "good roads movement" in full blast and a pervading civic pride in the improvement of towns and cities, it is a little surprising that the most inexpensive system of ornamentation which could be devised, viz., shade trees, should be practically overlooked in the various schemes of urban improvement.

The fact is, during the last twenty years of unusual development, there seems to have been an abnormal antipathy to trees on the part of city authorities everywhere. Occasionally there have been half-hearted attempts to plant trees, but they have been placed in such constricted areas as to be incapable of growth and, as a rule, have been left unprotected.

The benefits conferred by liberal growth of shade trees are out of all proportion to the cost, and it is to be hoped that before long the civic spirit of the average city will have become sufficiently developed to provide for the planting of trees in city streets under conditions that will permit them to develop normally.

* * *

Faith vs. Demonstration

It is a question whether the public is benefited by certain attempts to rationalize all methods of cure. Medical writers become indignant in their denunciation of the family doctor who will not demonstrate the presence of a tuberculous infection of the lungs in its earliest incipient stage. Column after column of sarcasm is poured upon physicians who still prescribe lithia waters, or who fail to explode the faith of their patients in some old remedy which the family physician in question may have prescribed years ago, prior to these modern days of skepticism.

It is going to be a little hard to uproot the faith cure from the professional routine. How many times a year does it probably happen that the family doctor calls around upon some depressed patient who has gradually been accumulating a burden of apprehension and misgiving, and after a

few minutes' chat goes away, apparently taking the burden with him?

When a doctor has taken charge of a young family and sees the children gradually reach maturity, and been in confidential relations with the parents and noted the various idiosyncrasies of the different members of the family, he is about as reluctant to try, by extraordinary methods, to locate some tuberculous germ and triumphantly announce his discovery as the father or mother would be. If he is suspicious he hopes by solicitous care and encouragement and an unfailing atmosphere of cheerfulness to lift the patient out of the menacing condition of physical depression and not have him dismayed and stricken by some crushing announcement.

If the family doctor prescribes lithia water under the conditions for which it was at first announced to be useful, and has seen benefits following its use, he is not overwhelmingly impressed with the chemical conclusion that it could not by any possible means possess any real therapeutic value. There is often quite a difference between theory and practice.

* * *

Fame

Considerable glory has now been achieved by Mr. Lincoln Beachy and others who have dared to undertake gymnastic exploits suspended in the atmosphere on an aëroplane. At present, however, the ranks of this profession are not seriously crowded.

There are other much safer ways of acquiring not only great fame, but greater emolument. Realizing that "there is a tide in the affairs of men," etc., a certain young married couple have advanced their way to the dizziest heights of not only fame, but fortune. Days, nights, and Sundays this young couple are studying how they may devise new and more fantastic forms of dancing, which they know by experience will be eagerly taken up, and at least experimented with, by a large number of admirers.

Fame would, therefore, seem to denote the possession of the ability to take advantage of the psychologic moment.

* * *

As to Public Documents

The complaint is made that an ungrateful people fails to take advantage of a great multitude of valuable suggestions sent out as public documents from Washington.

There are a few basic facts which could at present be circulated to excellent advantage, and which would constitute a very useful preparation for the present form of instruction.

It would not cost a great deal of money to reprint and distribute Poor Richard's Almanac. The homely truths contained in this masterpiece of Benjamin Franklin's are at the present time largely lost sight of. "A fat kitchen makes a lean will." This one aphorism out of many other epigrammatic statements tells us that personal extravagance, now almost universal, is inevitably followed by financial anxiety in the future.

It is not the necessities of life, but the incidentals, which use up the average income.

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Original Articles and Summaries of Selected Articles

THE APPLICATION OF SOME MUSCULAR TISSUES ADAPTED TO PHYSIOLOGIC STANDARDIZATION. STANDARDIZATION OF ERGOT AND PITUITARY PREPARATIONS.

(Continuation of a Previously Reported Study.[1])

BY F. E. STEWART, PH.G., M.D.,

Professor of Materia Medica and Botany, Departments of Pharmacy and Chemistry, Medico-Chirurgical College,

AND

P. S. PITTENGER, PH.G., PH.C., PHAR.D.,

Instructor in Pharmacodynamics, Departments of Pharmacy and Chemistry, Medico-Chirurgical College,

PHILADELPHIA, PA.

IN a paper read before the American Therapeutic Society last year we presented the results of our investigations into the subject of standardizing ergot by means of its effect upon the isolated uterus. After a brief discussion of the principal objections to the uterine methods formerly employed, we described in detail a method and apparatus which we had devised for testing ergot upon the isolated uterus of the virgin guinea-pig. The paper was supplemented by charts showing the increased sensitiveness and accuracy of the new method as compared with the old ones. Attention was also called to the variation in uteri as to power and muscular structure and to the means of distinguishing active from inactive uteri.

During the past year we have devoted considerable time to a study of the possibilities of employing this method for other purposes.

The marked sensitiveness of the method together with the concordant results obtained by its employment led us to believe that through it we could

perhaps ascertain whether or not the uterine and circulatory actions of ergot run parallel to one another. This is an important factor, since the blood-pressure method is rather extensively used for standardization purposes, its employment being supported by statements that the characteristic effect of ergot is a stimulation of all unstriped muscle tissue of the body, and that the changes in the circulation, in the intestines, and in the uterus are but a part of one general action. The employment of this method has been further supported by the fact that all the substances which have been suggested by various writers as being the active principles of ergot have produced stimulation of the blood-vessels as well as of the uterus. So far as we are able to learn, however, no experimental results have ever been published to show whether or not these two actions run parallel.

We are, therefore, now testing every sample of ergot submitted for assay by both the uterine and blood-pressure methods. By this means we shall be able after a sufficient number of samples have been tested to compare the results obtained and thus determine whether or not a parallelism does exist between these two actions. If on completion of the experiments the results show that all the samples which assay high by the blood-pressure method also assay high by the uterine method we shall know that these actions do run parallel. If, on the other hand, some samples run high by one method and low by the other we shall know that such a parallelism does not exist.

In order to express the activity of the preparations and percentages it is necessary to adopt some provisional standard with which to compare the unknown preparation. After much experience we have adopted the following standard for the blood-pressure method:—

"0.08 c.c. of the fluidextract per kilo, intravenously injected into a series of two or more dogs, should cause an average rise of blood-pressure of 30 mm."

Preparation	Comparative strength by B. P. method	Comparative strength by uterine method
No. 1 F. E.	166%	170%
No. 2 Cornutol	100%	90%
No. 3 F. E.	153%	148%
No. 4 F. E. 5 months old	51%	100%
No. 5 F. E.	224%	230%
No. 6 F. E.	210%	198%
No. 7 F. E.	118%	105%
No. 8 F. E.	80%	100%
No. 9 F. E.	125%	135%

In order that the results obtained from the uterine and blood-pressure method may be compared we have also adopted a fluidextract of ergot of the above strength as the standard for the uterine method. After a fluidextract has been adjusted to the exact strength above stated, it is placed in 4 c.c. vacuum ampoules to prevent deterioration.[2] These can then be opened and used as required.

The foregoing table would indicate that a parallelism does exist between the action of ergot upon the circulatory system and the action upon the uterus. We shall be unable, however, to arrive at a definite conclusion until more data have been compiled; therefore, our investigations along these lines will be continued for another year.

The ever-increasing popularity of the pituitary gland as a medical agent induced us to next direct our attention to methods of standardizing this body.

The rôle which the pituitary body or hypophysis plays in life has until recently been a mystery. It was at first thought that its function was to lubricate the nasal cavities. This belief, however, was soon discarded and replaced by the supposition that the gland was, like the appendix, of no use at all. Later, however, it was proven by Vassale and Sacchi,[3] Caselli,[4] and others that the gland plays a very important rôle and is absolutely necessary to life. It has also been found that acromegaly and other diseases are due to functional disturbances produced by this gland. The similarity between the histologic characters of the anterior lobe of the pituitary and the thyroid has suggested that the pituitary supplied a secretion. This view, defended by Rénon, Launois, Cushing, and others, is the prevailing one. Sajous claims, however, that recently recorded data, together with the facts that an extract of the glandular lobe, the anterior, is inert, while extracts of the posterior or neural lobe, which is not glandular, are alone active, tend to invalidate this view. According to Sajous,[5] the pituitary is not the source of a secretion, but functionally a nervous organ which co-ordinates the activities of the thyroid and adrenals. When toxics of certain kinds occur in the blood they excite the pituitary body and through this organ increase the production of thyroid and adrenal secretions, to which Sajous and others have attributed antitoxic functions. The effects of pituitary extract are ascribed by Sajous[6] mainly to the presence of epinephrin, which, as shown by the chromaffin test, is present in the posterior lobe in firm organic combination.

The knowledge concerning the chemical structure of the pituitary gland is, however, still in its infancy and has only recently gained proportions sufficient to warrant the hope that science will ultimately be as successful in isolating an active principle or principles from this gland as it has been with the suprarenal gland. Owing to the similarity existing between the physiologic actions of the pituitary and those of the suprarenal gland, the theory has been advanced that the active principle of the former will be very similar to epinephrin. In fact, it has been shown that the active principle of the gland can be concentrated into a basic fraction forming salts with acids. Fühner,[7] however, has demonstrated that this basic fraction can be split into several fractions. Schäfer and Vincent[8] had also shown some time before

that the blood-pressure-raising principle could be divided into two fractions through the different solubilities of the latter in alcohol, one fraction possessing a pressor and the other a depressor action. These facts would tend to prove that the action of the extracts of the pituitary body is due not to the action of one, but to the combined actions of several active principles.

The pituitary body varies in size according to the age and species of the animal. The gland most commonly used in therapeutics is that obtained from the ox, and is about ¾ inch in diameter.

The gland is composed of two parts or lobes,—the anterior and the posterior, or infundibular. The smaller, or posterior, lobe, which forms only about 10 to 15 per cent. of the total gland, is the more important therapeutically. This lobe contains practically all of the active principle, while the anterior lobe is the one which is so necessary to life.

The total pituitary body contains about 80 per cent. of water, or, in other words, 100 parts of the fresh gland yield about 20 parts of dry substance, containing 2 to 3 parts of the posterior lobe.

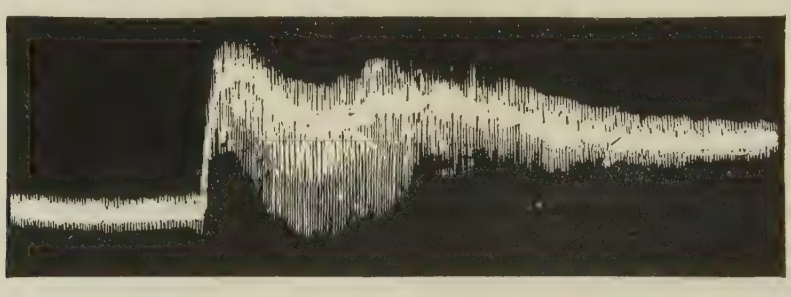

Fig. 1.—Effect of pituitary extract on the blood-pressure. (*From Pittenger's "Biochemic Drug Assay Methods."*)

This gland has become of great interest to the physiologist and clinician. The discovery of P. Marie[9] in 1886 that the disease known as acromegaly is associated with pathologic changes in the pituitary has been followed by other discoveries in relation to the pituitary body that are epoch-making. Oliver and Schäfer[10] in 1894 found that intravenous injection of aqueous or saline extracts of the entire organ produces a marked rise in the general blood-pressure, not so great as in the case of epinephrin, but more prolonged. The action is peripheral and is due mainly to constriction of the arterioles. Magnus and Schäfer[11] and Schäfer and Herring[12] have shown that it accelerates diuresis. Howell demonstrated that its pressor effect is obtained only from extracts of the posterior lobe and that the anterior lobe is physiologically inactive; also that the action is directly on the heart and blood-vessels and not through the autonomic nervous system. The investigations of Dale,[13] Cramer,[14] von Frankl-Hochwart and Fröhlich,[15] and others prove that it causes marked uterine contraction. Ott and Scott[16] found that it exerts a marked galactagogal action. Schäfer and Mackenzie[17] confirmed the findings of Ott and Scott (1910). They used a dried extract made from

the posterior lobe and proved that the galactagogue substance is not present in the pars anterior. An extract of the pars anterior seems to have some stimulating effect upon the sexual development, according to Götsch. Hendley[18] finds it a valuable aid in shortening the long and often exhausting

Fig. 2.—Effect of pituitary extract on the isolated uterus: *A* to *B*, normal; at *B*, 0.01 c.c. of pituitary extract was added. (*From Pittenger's "Biochemic Drug Assay Methods."*)

first stage of labor, especially in "dry" labors. He also refers to it as a powerful remedy in shock and collapse from prolonged chloroform anesthesia. It acts as a calmative in excitement in labor occurring in patients of nervous temperament. It prevents postpartum retention of urine, and it controls hemorrhage.

Frey and Kumpiess[19] state that extract of pituitary prevents postpar-

tum retention of urine. It inhibits urinary flow when first injected, this effect being followed in a few hours by a reactionary polyuria. There is also a relative increase in sodium chloride excreted.

Ebele[20] finds pituitary extract invaluable for the treatment of retention of urine during the puerperium or after operations. This action is exhibited only when the bladder is full. He, therefore, waits sixteen to thirty-six hours after the last micturition before giving an intramuscular injection. When the bladder has emptied itself retention is not again experienced.

Vogt[21] gives the extract in the treatment of postpartum hemorrhage and also as a prophylactic. He finds, moreover, that it aids in the normal separation of the placenta and is of service in retained placenta after miscarriage.

Every valuable drug has some untoward effects and limitations, and it is not surprising that a drug of so much potency is capable of producing harm if not skillfully employed. The following summary, relating to its untoward effect, is taken from the Journal of the American Medical Association, May 2, 1914, where it appears under "Queries and Minor Notes," page 1421. In answer to the question, "Have any bad results on either mother or child been reported from pituitary extract?" the editor says:—

"Stern,[22] Bagger-Jörgensen,[23] and Spaeth[24] report cases of atony of the uterus. Nagy,[25] Spaeth,[26] Malinowsky,[27] and Lieven[28] report cases of impairment and slowing of the heart tones and asphyxia of the fetus. Schneider-Sievers,[29] Calman,[30] and Voigts[31] report cases of collapse, ringing in the ears, and dizziness. Nagy,[32] Schneider-Sievers,[33] and Toepfer[34] report cases of eclampsia. Mackenrodt,[35] Patek,[36] Rieck,[37] Hamm,[38] and Heil[39] report cases of contraction of the dilated uterus. Hamm,[40] Voigts,[41] Mackenrodt,[42] and Malinowsky[43] report cases of tetany of the uterus, and Voigts[44] reports a case of premature expulsion of the placenta. Rieck[45] reports a case of tetany of the uterus following the use of a pituitary extract and concludes that it is not to be recommended as an oxytocic in the home. E. Herz[46] reports a case of rupture of the uterus under pituitrin. Grumann[47] reports complications following the injection of pituitrin consisting of a rectocervical fistula produced by prolonged pressure of the head (for two hours). The mother survived. The child died of sepsis. H. B. Sheffield[48] reports a case of toxic convulsions in the child shortly after birth, in which pituitary extract was used, which disappeared on taking the infant from the breast. He attributes this trouble to pituitary extract which had been secreted in the mother's milk."

Standardization of Pituitary Extracts.

The brief historic review given above, together with the condition under which the product is now marketed, namely, in dose ampoules, the strength of which is not properly defined, demonstrates very clearly the necessity for standardization if uniformity in dose and physiologic effect is to be insured. The scant knowledge of the chemical composition of the gland renders it impossible to ascertain by chemical means the comparative value of two or

more extracts or fractions. It is, therefore, necessary to resort to physiologic assay methods.

There are three physiologic methods of standardization, namely, the actions of the drug upon blood-pressure, upon the uterus, and upon the kidney.

Blood-pressure Method for Standardizing Pituitary Extracts.[49]

"*Apparatus Necessary for Experiment.*—A large kymograph with manometer arranged for taking blood-pressure tracings on continuous rolls of smoked paper; accurately graduated all-glass syringe; large and small scalpels; small, sharp-pointed scissors; tenaculum; bulldog clamps; small glass cannula; silk ligatures, and a dog board.

"*Animals.*—Various animals may be employed, the dog, cat, or rabbit; but dogs of medium weight (8 to 14 kilo) give the best results.

"*Preparation of Experiment.*—First completely anesthetize the animal. Any of the volatile anesthetics may be employed, but since it is of great importance that the blood-pressure does not fluctuate from the action of the anesthetic, it is better to employ the morphine-acetone-chloroform anesthesia as follows:—

"Inject subcutaneously 0.01 Gm. of morphine sulphate per kilo body weight of animal, and forty-five to sixty minutes later give by mouth 1.5 to 2 Gm. of acetone-chloroform (1.5 Gm. for animals weighing 6 to 7 kilo; 2 Gm. for those weighing 10 to 12 kilo, and intermediate weights accordingly). The carotid artery is then exposed and connected with the mercurial manometer. Next an incision about 2 inches long is made over the saphenous vein at its junction with the femoral vein, and the tissues are severed just enough to free about 1 inch of each. These veins are used for making the injections.

"*Actual Standardization.*—After all preliminary arrangements have been completed about 0.05 c.c. of the standard extract should be injected into the femoral vein. If this produces a rise in blood-pressure less than 24 mm. (12 mm. as recorded by the U-shaped manometer) the dose of the standard extract should be increased. If, on the other hand, the injection of 0.05 c.c. produces a rise of more than 40 mm. the dose should be decreased, as large doses markedly influence the succeeding injections. (See Fig. 3.) After the 'standard dose' of the standard solution is thus determined a 'standard dose' of the unknown solution is injected and the rise in pressure compared with that produced by the standard solution. If the difference is very great the unknown solution is strengthened or diluted as the case may be. The size of the injection is then increased or decreased until that dose of the unknown solution is found which will cause the same rise in pressure as that produced by the 'standard dose' of the standard solution. Occasional injections of the standard solution should be made to show the variation in the reaction of the animal, due to the effects of previous injections. Final equality is secured by injecting alternately a standard and the unknown solutions until the average rise of several consecutive injections is practically equal.

"The fact that the blood-pressure method involves the simplest technique,

together with its satisfactory and almost universal use as a means of standardizing epinephrin and suprarenal extracts, would at first lead one to believe that this method would also be the most satisfactory one for standardizing pituitary extracts. It has, however, serious disadvantages in the latter case. As before stated, the blood-pressure-raising principle can be divided into two parts, one possessing a pressor and the other a depressor action. Prof. Fühner,[7] of Freiburg, has also shown that the sum of the basic principles tested by him caused marked uterine contractions and only a slight pressor action, which was almost completely masked by a marked preliminary depressor action.

"Furthermore, extracts which had been deprived of their depressor action by fractionation with alcohol showed marked pressor effects, while on the other hand, they were sometimes almost entirely free from action on the uterus.

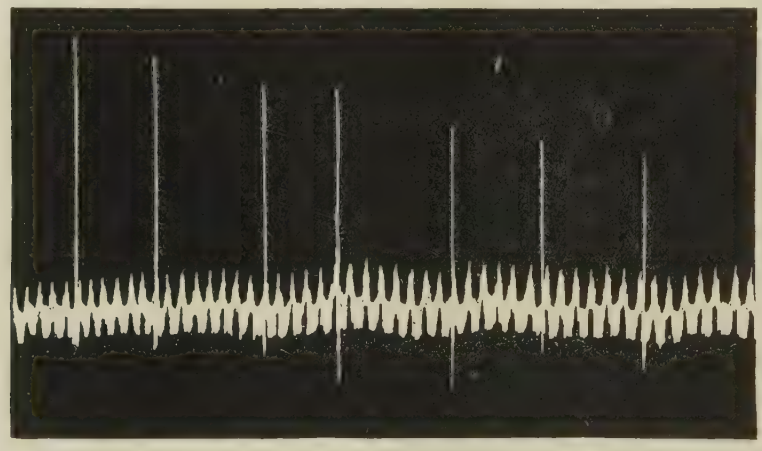

Fig. 3.—Shows the gradual decrease in the rises in blood-pressure produced by repeated injections, of equal size, of pituitary extract. (*From Pittenger's "Biochemic Drug Assay Methods."*)

"Another serious drawback to the blood-pressure-raising method is the fact that the active principles of pituitary extract are not nearly as rapidly oxidized as those of the suprarenal gland and therefore repeated injections of equal sizes produce unequal rises, the subsequent ones generally showing a waning of the pressor action and an increasing prominence of the preliminary depressions.

"Still another objection to the blood-pressure method is its comparatively low sensitiveness; in other words, it requires, in most cases, a rather large variation in the size of the injection to produce a variation in the resultant rise. This latter objection is especially serious when comparing two or more samples for research purposes, in which case a mistake of 20 to 30 per cent. in interpreting the results of an assay may cause a considerable loss of time. The greater sensitiveness of the uterine method is shown by Figs. 4 and 5, which show the results obtained from tests upon both the blood-pressure

and isolated uterus methods, in order to determine which was the better of two pituitary extracts made by different processes. According to the blood-pressure method both extracts showed the same activity, while when tested by the uterine method, which is far more sensitive, 8 minims of one extract proved to be more active than 12 minims of the other.

"It has been shown by Dale and Laidlaw that *methods of standardization based upon the diuretic action of pituitary extracts* are also unsatisfactory because of the tolerance produced by the first injection. They state that if small doses are used in order to overcome this tolerance 'it may be difficult to distinguish genuine effects from the spontaneous variations of urinary flow which occur in almost any experiment, however constant the controllable conditions.'

"The unsatisfactory results obtained by these methods led us to carry out experiments in order to determine whether or not the isolated uterus apparatus

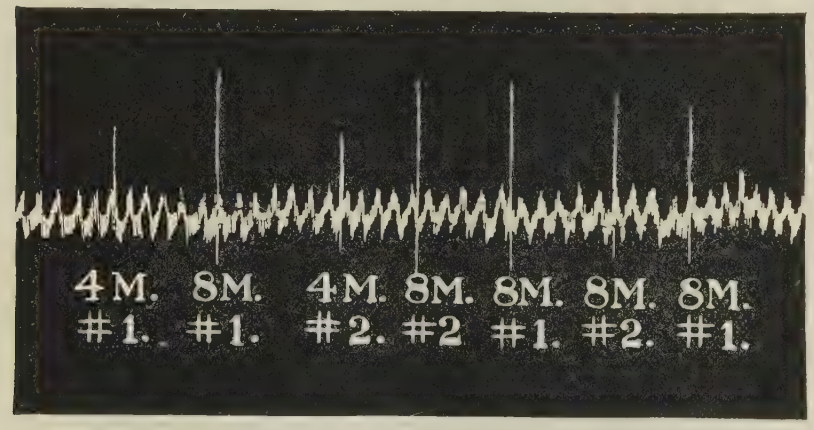

Fig. 4.—Tracing showing equal rises in blood-pressure from equal amounts of the two extracts of pituitary mentioned above. (*From Pittenger's "Biochemic Drug Assay Methods."*)

devised by us for testing ergot would be equally satisfactory for assaying pituitary extracts. The results of these experiments prove this apparatus and method to be even better adapted to testing pituitary extracts than for testing ergot. The details of the test follow.

"Isolated Uterus Method of Standardizing Pituitary Extracts.—The action upon the isolated uterus has, in the hands of most workers, proven to be a very satisfactory method of valuating pituitary extracts. By this method a small uterine muscle is suspended in a comparatively large volume of oxygenated Ringer's solution, which can be readily removed and replaced by a fresh volume. This gives a much better chance, than presented by other methods, for the tissue to recover its original condition by the rapid washing out of the principle or the reduction of its concentration to below the threshold of activity.

"Apparatus Necessary for Experiments, Animals, Method of Injecting, Preparation of Experiment, and Technique.—Same as described in introductory paper presented last year under the heading 'Isolated Uterus Method for Standardizing Ergot.'[1]

"Preparation of Standard Solution.—Due to the variation in susceptibility of the different uteri, this method must essentially be comparative and not absolute. This necessitates the adoption of an arbitrary standard with which the activity of the unknown can be compared.

"This is a point on which some generally acceptable convention is ultimately to be desired, but further experience with the conditions of stability is

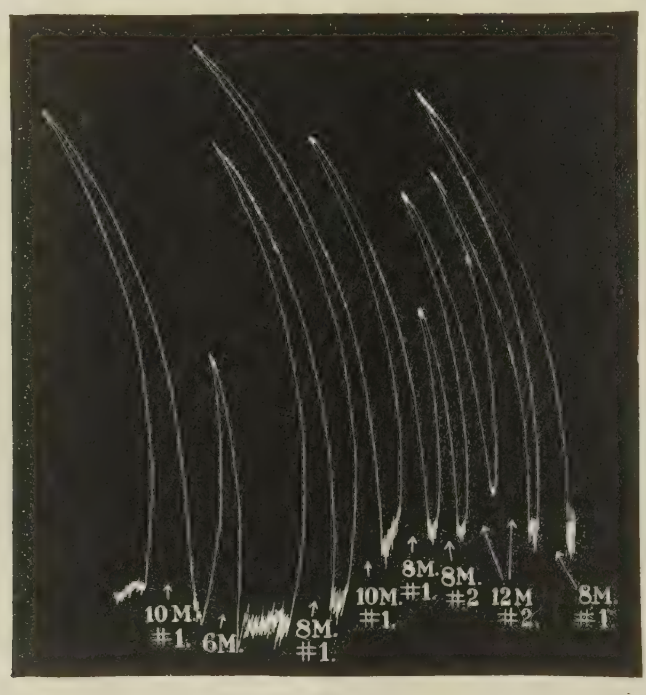

Fig. 5.—Tracing proving the sensitiveness of the uterine method. Chart shows 8 minims of extract No. 1 to be stronger than 12 minims of extract No. 2. By the blood-pressure method (owing to its lower sensitiveness) both preparations show the same activity. (*From Pittenger's "Biochemic Drug Assay Methods."*)

needed before any definite recommendation can be given. Schäfer and Herring state that the fresh infundibular substance, dried at a low temperature, is indefinitely stable, and it may be that ultimately a freshly prepared decoction of such a dried material will prove to be the best standard of reference. But Schäfer and Herring's statement was evidently based on general impression—the effects produced, that is to say, did not become obviously weaker on the average. The question is by no means a simple one, for no absolute reference exists, on the one hand, which can be with certainty reproduced, while, on the other hand, the available methods of evaluation are essentially com-

parative. The variation in the responsiveness of different individuals, or different isolated uteri, is very wide, so that neither the minimal effective dose nor the magnitude of response to a dose of standard size gives any useful information. For the present we use as a standard the extract prepared by a brief boiling of the perfectly fresh and finely pounded infundibular material with a definite proportion of acidulated water, so as to produce a 10 per cent. or 20 per cent. extract of the fresh moist substance. The extract is then sterilized by brief autoclaving in small phials. Some activity is lost in autoclaving, but the preparation thereafter has great stability. The use of small phials, of which one can be used for each test, obviates repeated sterilization, which is inadmissible. At frequent intervals a new batch is chosen which has an activity equal to or just perceptibly greater than that of the former standard, so that the possibility of a very slow lowering of the standard is eliminated, though we have as yet no evidence of deterioration under such conditions (Dale and Laidlaw).

"*Actual Standardization.*—After the uterus has been placed in the apparatus and has attained the condition of uniform low tonus, a small dose (about 0.01 c.c.) of the standard extract is pipetted into the Ringer solution in which the uterus is suspended. If all conditions are ideal the uterus, which was recording small, rhythmic contractions, will now forcibly contract and record its contraction by a long, sweeping curve. The dose should be sufficiently large to produce a nearly but not quite maximal tonus. If this initial dose of the standard extract produces a maximum tonus the drugged solution should be quickly removed and replaced by fresh Ringer's, after which a smaller dose is tried. If, on the other hand, the lever after rising to a position of partial tonus falls again and a wide rhythm ensues, the dose is too small. In such cases the solution should be changed and after about ten minutes at minimal tonus larger doses should be tried. If, however, doses of 0.03 c.c. do not produce tonic contractions, the uterus should be discarded and replaced by another. After thus determining the 'standard dose' of the standard extract, a 'standard dose' of the unknown extract should be given and the resultant contraction compared with that produced by the standard extract. If the difference is *very* great the unknown solution is strengthened or diluted accordingly. The size of the injections is then increased or decreased until that dose of the unknown is found which will cause a contraction of an amplitude equal to that produced by the standard. Occasional injections of the standard solution should be made to insure constancy in the reaction of the uterus. Final equality is secured by injecting alternately the standard and the unknown extract until the average amplitude of the curves produced by several consecutive injections is practically equal.

"It is not necessarily significant that there occur a slight variation in the amplitude of the curves produced by two successive doses, as a second equal dose of the same preparation will frequently give a contraction of slightly greater amplitude than that produced by the first dose, or may, on the other hand, produce a slightly smaller one. The uniformity of result is more nearly complete with some uteri than others. The uniformity depends to a consider-

able extent on the *uniformity of interval between the doses,* so that the first dose of a group, either at the beginning of the experiment, or at a later stage following a prolonged interruption, tends to produce a slightly abnormal result in one direction or the other. The succeeding doses, however, generally give concordant results. On the other hand, it is inadvisable to give a long

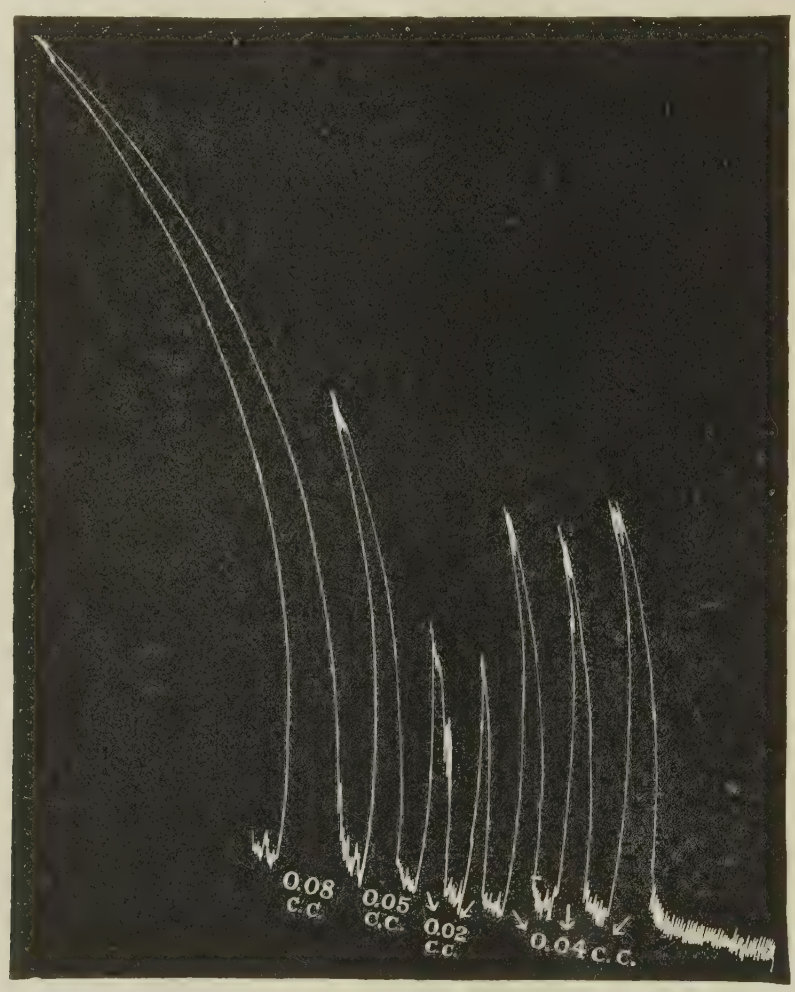

Fig. 6.—Demonstrates the concordant results obtained from repeated doses of an equal amount of pituitary extract. (*From Pittenger's "Biochemic Drug Assay Methods."*)

series of doses at short intervals, as this produces a gradual decline in the sensitiveness of the uterus. It is advisable, therefore, when making a series of comparisons, to give a group of four or five doses at about ten-minute intervals, then allow an interval of about one-half hour or so and then follow with another group, regarding the first member of each group of curves as probably abnormal. Good uteri will give reliable results for eight to ten hours after being excised and placed in the oxygenated Ringer solution.

"This method is by far the best so far proposed for the standardization of pituitary extracts, as differences of activity which are only just appreciable by the blood-pressure method, under the best conditions, are at once obvious in the test on the uterus without any special care in controlling the regularity of the response."

REFERENCES.

1. Stewart and Pittenger: "The Application of Some Muscular Tissues Adapted to Physiologic Standardization," Monthly Cyclopedia and Medical Bulletin, Sept., 1913.

2. Pittenger and Vanderkleed: "A New and Reliable Method for the Preservation of Ergot Preparations," Journal of the American Pharmaceutical Association, Aug., 1912.

3. Vassale and Sacchi: "Rivista Sperimentale de Freniatria," p. 83, 1894.

4. Caselli: "Studii anatomici e sperimentali sulla Fisiopatologia della Glandola pituitaria," 1900.

5. Sajous: American Medicine, p. 200, April, 1914.

6. Sajous: "Internal Secretions and the Principles of Medicine," vol. i, p. 216.

7. Führer: "Hypophyse," Deutsche medizinische Wochenschrift, p. 491, March, 1913.

8. Schäfer and Vincent: Journal of Physiology, May 11, 1899.

9. P. Marie: Revue de médecine, vi, p. 297, 1886.

10. Oliver and Schäfer: Journal of Physiology, xviii, p. 277, 1895.

11. Magnus and Schäfer: Proceedings of the Physiological Society, p. 11, 1901.

12. Schäfer and Herring: Philosophical Transactions, 1906, B.

13. Dale: Biochemical Journal, iv, p. 427, 1909.

14. Cramer: Quarterly Journal of Experimental Physiology, i, p. 189, 1908.

15. Von Frankl-Hochwart and Fröhlich: Archiv für experimentelle Pathologie und Pharmakologie, lxiii, p. 347, 1910.

16. Ott and Scott: Proceedings of the Society for Experimental Biology, New York, 1910.

17. Schäfer and Mackenzie: Proceedings of the Royal Society, London B 84, p. 16, 1911.

18. Hendley: British Medical Journal, p. 906, April 25, 1914.

19. Frey and Kumpiess: Zeitschrift für die gesammte exper., March 2, 1914.

20. Ebele: Zeitschrift für gynäkologische Urologie, March 4, 1913; abst., British Medical Journal, April 25, 1914.

21. Vogt: Deutsche medizinische Wochenschrift, 1913.

22. Stern: Zentralblatt für Gynäkologie, No. 31, 1911.

23. Bagger-Jörgensen: Zentralblatt für Gynäkologie, No. 37, 1911.

24. Spaeth: Zentralblatt für Gynäkologie, No. 37, 1911.

25. Nagy: Zentralblatt für Gynäkologie, No. 10, 1912.

26. Spaeth: Zentralblatt für Gynäkologie, No. 5, 1911.

27. Malinowsky: Zentralblatt für Gynäkologie, No. 43, 1912.

28. Lieven: Zentralblatt für Gynäkologie, No. 10, 1913.

29. Schneider-Sievers: Sitzungsberichte der Geburtshülfe Gesellschaft, No. 1, 1912.

30. Calman: *Ibid.*

31. Voigts: Münchener medizinische Wochenschrift, No. 49, 1912.

32. Nagy: Zentralblatt für Gynäkologie, No. 10, 1912.

33. Schneider-Sievers: Sitzungsberichte der Geburtshülfe Gesellschaft, No. 1, 1912.

34. Toepfer: Sitzungsberichte der Geburtshülfe Gesellschaft, No. 1, 1912.

35. Mackenrodt: Sitzungsberichte der Gesellschaft für Geburtshülfe und Gynäkologie, No. 24, 1911.

36. Patek: Zentralblatt für Gynäkologie, No. 33, 1912.

37. Rieck: Münchener medizinische Wochenschrift, No. 2, 1912.

38. Hamm: *Ibid.*
39. Heil: Zentralblatt für Gynäkologie, No. 42, 1912.
40. Hamm: Münchener medizinische Wochenschrift, No. 2, 1912.
41. Voigts: Münchener medizinische Wochenschrift, No. 49, 1912.
42. Mackenrodt: Sitzungsberichte der Gesellschaft für Geburtshülfe und Gynäkologie, No. 24, 1911.
43. Malinowsky: Zentralblatt für Gynäkologie, No. 43, 1912.
44. Voigts: Münchener medizinische Wochenschrift, No. 49, 1912.
45. Rieck: Münchener medizinische Wochenschrift, April 9, 1912.
46. Herz: Zentralblatt für Gynäkologie, May 17, 1913; abstr., Journal of the American Medical Association, p. 2072, June 28, 1913.
47. Grumann: Münchener medizinische Wochenschrift, July 1, 1913; abstr., Journal of the American Medical Association, p. 444, Aug. 9, 1913.
48. Sheffield, H. B.: American Journal of Obstetrics, abstr., Feb., 1914.
49. Pittenger: "Biochemic Drug Assay Methods," 1914.

ACROMEGALY APPARENTLY UNILATERAL.*

By E. LACAILLE, M.D.,

PARIS, FRANCE.

While most giants and acromegalics that have come under the author's observation have been of symmetric build and features, he has come across 3 cases—one reported twelve years ago—in which there was apparently an asymmetry of the acromegalic process on the two sides. In one of the cases now reported, one hand is about 1 cm. longer than the other, and the corresponding forearm 2 cm. longer than its fellow. The second case, which the author was able to study more closely, was that of a man aged 52, an attaché of the French Embassy in Pekin. Until the age of 50 nothing unusual was noted, but in the last two years the patient noticed his right arm and hand growing longer, and the hand also broader. The distal extremities of the metacarpals present a fusiform appearance in the X-ray pictures; this appearance is considered by many characteristic of acromegaly. The face also shows signs of the disease, viz., broadening of the malar prominences and the median eminence of the forehead, *i.e.*, of the maxillary and frontal sinuses. Left and right lateral X-ray pictures of the head show that, while the enlargement of these sinuses has been almost the same on the two sides, the shadow on the right side of the sella turcica is not equivalent in size or shape with that on the left. It seems clear that the pituitary fossa is larger on one side than the other, and it seems warranted to conclude that the portion of the pituitary occupying the one side is larger than that in the other. The side on which the sella turcica is larger is the opposite of that on which the lengthening of the arm was noted. Marked asymmetry has been noted in cases of achondroplasia, but in the present patient, 52 years old, the changes were only of two years' standing, and there could be no question of achondroplasia.

* Summary of article in Bulletins et Mémoires de la Société de Médecine de Paris, April 10, 1914.

THE EFFECTS OF ADRENAL MASSAGE ON BLOOD-PRESSURE.*

By R. G. HOSKINS, Ph.D.,

AND

CLAYTON McPEEK, M.D.,

COLUMBUS, O.

Cannon and Lyman have conclusively proved that, in the cat at least, when blood-pressure is at a normal height, injections of pure epinephrin in minute dosage and at the proper rate invariably produce a depression of blood-pressure. This effect can be secured time after time. If initial tension is low, however, only an augmented pressure can be secured. Hoskins and McClure have reported that in the dog also the effect of minute doses of epinephrin (adrenalin) is characteristically a fall of pressure. The assumption that epinephrin circulating even in minute (physiologic) quantities does have a pressor influence is the basis of a widely held theory that an important function of the adrenals is to maintain a tonic activity in the vasomotor system, or, indeed, in the sympathetic system as a whole. So far as the cat is concerned, the matter is conclusively determined. Similarly conclusive evidence should be obtained as regards other animals. The authors therefore decided to investigate further in the dog the vascular reactions to adrenal stimulation, noting particularly the effects of varying the strength of stimulus.

It was necessary to devise some way of stimulating the glands during conditions of normal pressure without, at the same time, unduly stimulating any of the intact contiguous nerve fibers. Stewart having called attention to the fact that massage of the adrenals readily causes an augmented epinephrin secretion, it was decided to make use of this fact to secure adrenal discharge. With careful manipulations, massage sufficient to affect the adrenals can be applied in the region of these glands without causing any significant influence on blood-pressure, due to stimulating other structures. It proved also necessary to work very carefully to prevent a premature exhaustion of the available epinephrin. Anesthesia, asphyxia, violent emotions, and sensory stimulation, all had to be reduced to a minimum. A dog of quiet temperament was etherized with as little excitement or asphyxiation as possible. Then, after it was strapped to an animal-holder, urethane was given by stomach-tube, about 2 Gm. per kilogram, and the ether discontinued as the urethane became effective. A cannula was inserted into one of the carotid arteries and connected with a recording mercury manometer. An incision about 2 inches long was then made through the body wall in the region of each adrenal. Through these a finger or finger and thumb could be inserted and the adrenals carefully massaged.

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* Summary of article in the Journal of the American Medical Association, June 7, 1913.

The results secured confirmed the earlier observations on the effects of varying dosage of epinephrin, ranging from marked depression with a small discharge, to considerable rise of pressure when the glands were vigorously manipulated. In no case, however, was there secured a rise of pressure at all comparable to that following the ordinary therapeutic dosage of epinephrin. Where a maximal discharge was obtained, it continued for about four minutes after the massage had ceased. In experiments starting with a mean blood-pressure of 120 mm., very dilute solutions of epinephrin gave a pronounced fall of pressure. When in the same dog, however, the initial tension was 40 mm., only purely pressor effects could be obtained.

These results, as well as those of Cannon and Lyman, add support to the conclusion that adrenal secretion cannot be an immediate factor in normal blood-pressure. There can be little doubt that the injection or discharge of epinephrin in gradually increasing amounts will result first in an augmentation of any physiologic effect that normally circulating epinephrin might be producing. It follows that since the first effect of such injection is depression, the adrenals have normally either no immediate influence or else have a depressor effect on arterial tension. It is only when a distinctly abnormal quantity is used that a hypertension occurs. Support for the same conclusion is also derived from the fact, reported by Hoskins and McClure in 1912, that epinephrin injections bring intestinal peristalsis to a complete standstill in dosages inadequate to raise blood-pressure. A mechanism that could promote vascular tension only at the expense of intestinal stasis would be obviously futile.

Explanation of the low blood-pressure in experimental adrenal deficiency or in Addison's disease is to be looked for, therefore, not in the failure of a normal tonic stimulant to the sympathetic system, but probably in an interference with muscular metabolisms, including those of the heart and arteries.

DUCTLESS-GLAND EXTRACTS IN RELATION TO EAR AFFECTIONS.*

By H. Y. McNAUGHT, M.D.,

SAN FRANCISCO, CAL.

Reik and Downey have stated that they believe one of the chief causes of tinnitus to be low blood-pressure, and they have used epinephrin as a blood-pressure-raising principle, apparently with good results in some cases. The author found likewise that the blood-pressure is usually low, often subnormal, and seldom high in tinnitus aurium, but does not believe that this low pressure has any causative relation to the tinnitus. That the results obtained by Reik and Downey were due to the pressure-raising effect is negatived, according to the author, by the fact that the drug was administered by

* Summary of article in the California State Journal of Medicine, November, 1913.

the mouth. The improvement, then, must have come from the circulation of the epinephrin in the blood rather than from a pressure-raising effect. Furthermore, the author found many patients whose symptoms disappeared under thyroid medication. The blood-pressure was taken at intervals, and though it was usually low to start with, it was still lower when the symptoms had disappeared.

As a good working basis for the use of ductless-gland extracts in ear affections the author advances the theory, supported by Beebe's conception of the thyroid function as that of a metabolic detoxicator, that tinnitus aurium can be caused by toxins irritating either the auditory centers or the cochlear nerve or its endings, and that such toxins may be produced by a lack of some one or more of the ductless-gland secretions. Deafness is known to occur in cretins, and to improve under thyroid. G. Bruhl has recently stated that, having used thyroid treatment himself, he was led to infer, after several successful cases, that there exists a connection between function or loss of function of the thyroid and the organ of hearing. The outlook along these lines is encouraging and should stimulate more research on the part of others.

The author reports a series of cases in which thyroid, parathyroid, and thymus extracts were used. As "cured" cases are classified those who had ceased to notice their tinnitus, and as "practically cured" those who noticed it only slightly at times, often at long intervals. Of course, a cured case, in the strict sense of the word, is one whose tinnitus has absolutely disappeared. But that one can ever attain this result the author doubts, inasmuch as even normal persons have a certain degree of tinnitus at all times.

Forty-six cases were treated. Some of these failed to report after the first visit, so the number observed was less. Of 13 cases of chronic catarrhal otitis media, 5 were cured, 2 practically cured, 2 much improved, 2 taken off treatment, and 2 slightly improved. In 1 case of chronic purulent otitis media there was no change in the tinnitus. Of 8 cases of internal ear disease, 2 were cured, 1 practically cured, 2 much improved, 1 unchanged, and 2 slightly improved. Of 7 cases of tubotympanic catarrh, 6 were practically cured and 1 much improved. In 7 cases of otosclerosis and 1 of tinnitus in a normal ear there was no change, and in 1 of chronic adhesive process slight improvement. Many of these patients also reported improved hearing as a result of the treatment. A number of them had exhibited before treatment signs of hypothyroidism, such as dry skin and harsh, dry hair. In no case was the weight lowered under thyroid or parathyroid extract. The author urges others who may try such treatment, however, to exercise care and judgment in the use of these powerful drugs, as they may do harm when abused of.

A CASE ILLUSTRATING DUCTLESS-GLAND RELATIONSHIP.*

By EMMET J. MULLALY, M.D.,

MONTREAL, CANADA.

There is a large number of cases which, while they do not show pronounced symptoms of disturbance of any of the ductless glands, yet are far from perfect health. Thus, a female with little or no enlargement of a thyroid lobe may become unduly nervous and irritable, particularly at puberty, during pregnancy, or at menopause, and perhaps have periods of sleeplessness or diarrhea, and yet have none of the other symptoms which one associates with Graves's disease. Or, dyspnea on the slightest exertion may develop in middle-aged patients, often without cough or cyanosis; the pulse becomes rapid and irregular, the tension high, the vessels sclerosed, and there is no history indicating an infection leading to valvular changes. The author's case illustrates the latter type:—

Mrs. S. B., aged 65 years, was admitted to the Royal Victoria Hospital with normal temperature, pulse 164, and respiration 36. Her complaints were shortness of breath, palpitation, and pain over the heart, eructations of gas, tremor of the body, weakness, and sleeplessness. For three years she had had a fine tremor of the hands, later of the head, gradually getting worse. Dyspnea was experienced on the slightest exertion. Three months prior to admission her appetite had failed. Five years before she had had symptoms akin to those of nervous prostration. There was hypertrophy of the right lobe of the thyroid, the time of onset of which was not certain, as her attention had never been directed to it; there was no exophthalmos. Occasionally she had attacks of dizziness. She had no cough nor cyanosis. She had a marked kyphosis, and edema of the feet and legs was quite evident. Her pulse was irregular and of high tension; vessels somewhat sclerosed. There were murmurs heard at the apex and over the tricuspid area. She remained in the hospital six weeks, and during that time improved considerably, although her pulse rate only got below 100 on one or two occasions. She returned in about two months, in a much worse condition. Her pulse could hardly be counted at the wrist, but the trembling so apparent at her first visit had disappeared, appearing only when she was excited. She had less nervousness, but more weakness. No cough, but marked dyspnea. The edema was more marked, involving the legs and abdominal wall, and she also had dullness at the base of the lungs. She died following a severe localized infection of the left leg, which developed two weeks after multiple punctures had been made to relieve the edema.

There was found at autopsy a dilatation of the heart; some atrophy of the heart muscle but no fibrosis, and slight thickening of the mitral valve. A terminal edema was present, as well as marked hydrothorax. The pancreas weighed only 70 Gm., was firm and pale, and microscopically showed fibrosis. The thyroid was twice the normal size; the right lobe was partially divided into two smaller lobes by a deep notch at one pole, and, when cut into, presented a rather unusual appearance, the central portion being occupied by a small, irregular, calcareous nodule, in the immediate vicinity of which was a rounded, encapsulated portion occupying over one-third of the entire lobe and which had undergone fibrohyaline degeneration. This

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* Summary of article in the Canadian Medical Association Journal, January, 1914.

fibrohyaline tissue was seen in thin strands throughout the entire organ and enclosed rounded adenocolloid portions of thyroid. One could hardly escape the conviction that the fibrohyaline center represented the original thyroid tissue, while the adenocolloid collections at either pole represented more recent additions. The left lobe appeared much more normal. The adrenals were both quite large; the left, which was the larger, measured 7 x 1.5 cm. The cortex was moderately pale and a little thinner than normal, but there was a remarkably large amount of dark-colored medulla, which formed the main mass of the organ. The right adrenal showed the same characteristics. The microscopic sections showed a thickened capsule, hypertrophy of the cortical layers, and well-marked chromophile cells in the medullary portion. The ovaries were atrophied and fibrosed, and the uterus showed a number of fibroids, a few of which had undergone calcareous degeneration.

The adrenal hypertrophy in this case is of interest, and leads one to wonder at the enlargement of the medulla of the organ and to question whether some of the symptoms in the case were not modified or caused by this abnormality. A plausible, but unverifiable interpretation of the events is that some time after the menopause, when the ovarian secretion became diminished or changed, the relationship between the ovary and the thyroid asserted itself, and the latter hypertrophied. There is the possibility that some reflex supplied by the fibrocalcareous changes in the uterus may have induced this unusual occurrence.

Clinically, the patient had all the usual symptoms of exophthalmic goiter except the exophthalmos. The condition had existed for some years, long enough to bring about the dilatation of the heart chambers, and all the secondary changes in the liver, kidneys, etc., consequent upon a poorly working organ. While at autopsy extensive areas in the thyroid were found indicating an atrophic state following upon former activity, tissue was also present highly suggestive of the changes noted in the exophthalmic thyroid.

It is difficult to assign to the enlarged adrenals their share in the production of symptoms. In disorders of the ductless glands the adrenals are frequently affected. Their undue enlargement has been noted in acromegaly and exophthalmic goiter, and their relation to the sexual glands is well known. It is probable that in the author's case above outlined the secretion from the enlarged adrenals increased the blood-pressure. The marked arteriosclerosis was possibly due to increased adrenal secretion.

THE PATHOLOGY OF THE THYROIDS FROM CASES OF TOXIC NON-EXOPHTHALMIC GOITER.*

By LOUIS B. WILSON, M.D.,

ROCHESTER, MINN.

Plummer has recently called attention to the fact that, clinically, there are two distinct groups of toxic goiters: one exophthalmic, and the other

* Summary of article in the Journal-Lancet, February 15, 1914.

toxic non-exophthalmic. The former, the author (Wilson) has demonstrated pathologically, all show primary hypertrophy and hyperplasia of the parenchyma as the dominant pathologic change in the thyroid. On the other hand, practically no cases of toxic non-exophthalmic or of non-toxic (*i.e.*, simple) goiter observed showed any such pathologic change. Thus, the evidence of the constant association of primary hypertrophy and hyperplasia of the thyroid gland with the symptoms of true exophthalmic goiter would seem to be fairly conclusive. The author's present communication deals in part with the pathology of the thyroid in cases of toxic non-exophthalmic goiter.

Fifty per cent. of the thyroids from 373 toxic non-exophthalmic cases comprised in the author's clinical group 2 (those which resemble more or less the true exophthalmic goiter cases) showed marked evidences of regeneration of the parenchyma. Regeneration of previously atrophic parenchyma of the thyroid is often a marked process, which can usually be differentiated from primary parenchymatous hypertrophy and hyperplasia by (*a*) the abundant presence of atrophic parenchyma within large acini; (*b*) the development of numerous new acini within one or more portions of the walls of the old large colloid-filled acini, and which early fill with dense colloid, and (*c*) the development of multiple layers of relatively small parenchyma cells within the large colloid-filled acini, which are to be distinguished from primary parenchymatous hypertrophy and hyperplasia by the smaller size of the parenchyma cells and the absence of papillæ.

Seventeen per cent. of the thyroids from the positively toxic cases in clinical group 1 (*i.e.*, those in which the clinical picture appears to be the result of a cardiac toxin) were of the regenerative type. Though this percentage is but one-third that of the preceding group, it is still nearly twice that shown by the thyroids of doubtful toxicity, and by the atoxic (simple) goiters, which gave the same (9 per cent.) in the regenerating class.

Twelve per cent. of the thyroids from the toxic non-exophthalmic cases of clinical group 2 were early fetal adenomas, and 33 per cent. degenerating fetal adenomas, making 45 per cent. in which the pathology was that of encapsulated adenomas made up of acini largely of lumenless type. This leaves but 5 per cent. of the cases in clinical group 2 in which the pathology of the thyroid was that of colloid goiters with adult parenchyma. This is in strong contrast to the distribution of the thyroids in the toxic cases from clinical group 1, in the positive ones of which only 7 per cent. of the thyroids were early fetal adenomas and 14 per cent. degenerating fetal adenomas, while 62 per cent. were colloid goiters with adult parenchyma.

The average age of true exophthalmic goiter patients at the time of the removal of the thyroid was in Plummer's cases 25 years in those cases in which the parenchyma of the thyroid was found to be in an early stage of primary hypertrophy and hyperplasia, 31.7 years in those cases in which it was in an advanced stage of primary parenchymatous hypertrophy and hyperplasia, and 40.7 years in those cases in which it showed regressive changes secondary to primary hypertrophy and hyperplasia of the parenchyma. In general, it may be said that patients with non-exophthalmic goiters come to operation

before they have developed their toxic symptoms at an average age of from 31 to 40 years, according to their pathologic classification, while patients with toxic non-exophthalmic goiters come to operation at an average age of from 32 to 52 years according to their pathologic grouping.

The average duration of goiter before operation in the cases of true exophthalmic goiter was 0.3 year for those in which the thyroid showed early primary parenchymatous hypertrophy and hyperplasia, 0.9 year in those with advanced primary parenchymatous hypertrophy and hyperplasia, and 3.5 years in those with regressing primary parenchymatous hypertrophy and hyperplasia. In the toxic cases of clinical group 2 the goiter had existed 6.9 years; in those with thyroid regeneration, 4.4 years; in those with early fetal adenomas, 12.6 years; in those with degenerating fetal adenomas, 5 years, and in those having colloid goiters with adult parenchyma, 14 years.

The average weight of the portion of gland removed is, in general, a fair relative index of the total size of the thyroid. Examination of the average of these weights for thyroids in the different groups shows that of those from cases of exophthalmic goiter, those with early primary parenchymatous hypertrophy and hyperplasia are the smallest (38 Gm.), those with advanced primary parenchymatous hypertrophy and hyperplasia considerably larger (61 Gm.), and those with regressing primary parenchymatous hypertrophy and hyperplasia smaller than the preceding (51 Gm.).

The cases of toxic goiter of clinical group 1 (*i.e.*, those in which the symptoms are of the cardiovascular variety) much more closely resemble cases of simple goiter in their pathology in all respects than do the cases of clinical group 2. A larger number of them are of the colloid-goiter type; the enlargement of the thyroid has existed for a longer period before operation, and the portion of the gland removed is materially larger than in those cases of clinical group 2.

All the above pathologic evidence points to a constant relative association of increased secretion and increased absorption from the thyroid, proportional to the degree of toxicity exerted in the patient. One has as yet no absolute proof that such secretion and absorption is the actual cause of the symptoms, but the evidence available strongly points to that conclusion.

Abstracts from Current Literature on the Internal Secretions

Operative Technique in Graves's Disease.—A technique that will carry an advanced exophthalmic goiter case through an operation without increasing the pulse rate can be followed either in ligation or lobectomy.

Ligation should be performed without removing the patient from bed. Nitrous oxide and oxygen may or may not be administered, but

according to the author's procedure the brain is always protected by a complete local blocking with novocaine during the operation and a complete quinine and urea hydrochloride infiltration at the close of the operation. Where lobectomy is to be performed, the patient is anesthetized with nitrous oxide oxygen in bed. Fictitious anesthesia having been given under the guise of treatment for several days previous to the operation, the patient when anesthetized is free from psychic strain, as he is under the impression that he is receiving an inhalation treatment.

When anesthetized, the patient is taken to the operating room. The division of tissue is preceded by a blocking so complete that no activating impulse can reach the brain. Before the wound is closed every part of the field is completely blocked by quinine and urea hydrochloride injected with a hypodermic needle. The patient is kept unconscious, under anesthesia, until he has returned to his room and until his room has been restored to its condition when administration of the anesthetic was begun. Since in the course of the cycle from his room to operation and return his brain has received no active stimuli, there can be no change in the pulse. No record of the operation has been written either upon the subconscious or the conscious brain. Besides, the postoperative hyperthyroidism is prevented or minimized, and the later clinical results are improved to the same extent as are the immediate results.

When a case of Graves's disease is subjected to a heavy nervous strain or to intense worry, the disease is aggravated for weeks or for months and not infrequently death results. The evil effects of the stress of facing the operating room are not only seen immediately, but are perpetuated on the following days and weeks and months by their frequent recall. From this handicap the "anoci association" patient is free, and by so much the convalescence is speeded on its way.

In carrying out the details of "anoci" the surgeon must re-educate himself; his assistants must be especially trained; in short, in the patient's entire cycle of entrance, operation and exit, there must be no sharp points of contact, either psychic or physical. Those who have had training in local anesthesia will find the details easy. The technique will reach its purpose only if rigidly carried out.

Graves's disease is due to a disarrangement of the general motor mechanism whereby the threshold of the brain to both psychic and traumatic stimuli has been lowered in varying degree. The stimulus which in the normal individual would cause no appreciable change in pulse or temperature will, in cases of Graves's disease, drive the brain and body so fast that greatly increased motor activity and a rise in temperature are caused. Anything, therefore, that raises the threshold of stimulation of the brain must diminish the susceptibility to pulse and temperature changes in the patient suffering from Graves's disease as well as in the normal individual. This explains why patients under morphine or in a stupor show little change after excitation, and why an operation performed under "anoci" is followed by diminished or no aseptic fever and

in Graves's disease by no so-called "hyperthyroidism." George W. Crile (Cleveland Medical Journal, August, 1913).

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Pathologic Changes of the Thyroid in Disease.—The object of the author's paper is to point out those diseases and toxemias that do and those that do not produce an alteration in the thyroid, to describe the pathologic changes, to compare them with those seen in goiter, and to note when these changes are associated with signs of thyroid excess. The work is based on some 700 thyroids of man and guinea-pigs collected from post-mortem examinations.

The first change the thyroid undergoes as the result of acute toxemia is an alteration in the colloid material. It loses its staining capacity, becomes granular and vacuolated, and finally disappears. During this change the gland is congested, with perhaps intervesicular hemorrhage. The walls of the empty vesicles become plicated, the short or fat epithelial cells lining the vesicles become high cubical, and finally columnar, and greatly increase in number. The plication of the walls and the cell increase go on until the vesicles, as such, are indistinguishable; during the transition the appearance is given of villous processes growing from the walls of the vesicles. When the hyperplasia is complete, the gland is hypertrophied, but its store of secretion is exhausted. The distinction between the acute and the complete hyperplasia is that in the acute the intervesicular hemorrhage is the most marked feature; the cell and vesicular changes have not progressed as far as that seen in the complete. The length of time that the gland takes to undergo a complete hyperplasia varies with the toxemia and its intensity; the whole change may take place in twenty-four hours. So certain is this hyperplasia that the thyroids taken from any one of these acute infections can be arranged in the order of the duration of the disease as it corresponds to the degree of hyperplasia, allowance being made for the very acute infections which can be noted by the extreme degree of intervesicular extravasation.

Acute toxemia thus causes a cycle of thyroid changes. First there is an acute hyperplasia in which the gland becomes hypertrophied and exhausted; when the toxin is overcome the gland involutes back to normal, but the effect of the toxemia is evident by the diminution of thyroid tissue and the intervesicular fibrosis. In the less acute toxemia the cell hyperplasia is more marked.

There are three characteristic stages in chronic hyperplasia: (1) When the vesicles are of equal size, the colloid being partially absorbed and coarsely granular, and the cells are proliferated; (2) when the vesicles are of unequal size and packed with colloid, with cell hyperplasia between them, and (3) when the gland is cirrhotic, with deficiency of thyroid tissue. R. Farrant (British Medical Journal, February 28, 1914).

* * *

The Internal Secretions and the Female Characteristics.—The ovaries alone are not responsible for the female characteristics. Al-

though the potentiality to produce femininity exists in the earliest stages of segmentation of the ovum, this potentiality is directed toward the future development and correlations of the endocrine glands which are to control the sexual evolution of the individual. It has been shown that the suprarenal cortex is largely responsible for the secondary sexual characteristics. Although the genitalia may be normal morphologically at birth (primary development), they became functionally active only at puberty (secondary development) if the whole endocrinous system is in perfect harmony and acting efficiently. Thyroid or pituitary insufficiency may cause the genital organs to remain infantile, and disease of these structures may cause retrogression in the genitalia even after they have functionated normally. Removal of the thyroid alone produces an intense degree of atrophy in the uterus. The ovaries, however, do not retrogress; on the contrary, there appears to be increased activity, especially in the follicles. While adrenal hypernephromata in male children are practically always associated with precocity of the sexual organs and secondary characteristics, in female children with adrenal hypernephromata the sexual organs are not precociously developed, for the tendency is rather to produce in them the characteristics of the male—a deep voice, enlargement of the clitoris, hirsuties, etc.

An excessive ovarian secretion leads to an increase in sexual activity both locally and generally. The local effects may be seen in an increased and prolonged menstruation. An excessive ovarian secretion affects the metabolism in the opposite way to oöphorectomy, and one of the most important metabolic disturbances is the abnormally large excretion of calcium salts. Bossi suggested the injection of epinephrin as an alternative to oöphorectomy. Apparently many cures have been effected by this treatment, and also by the injection of pituitary extract.

Thyroid insufficiency always causes a decrease in or complete cessation of the function of menstruation, according to the degree insufficiency of pituitary secretion is associated with amenorrhea or scanty menstruation. An excess of pituitary secretion, such as occurs in acromegaly, produces masculinity, and while in the male this may give rise to excessive sexuality, in the female it causes amenorrhea and loss of desire, as is only natural if masculinity be produced. Blair Bell (British Medical Journal; Charlotte Medical Journal, February, 1914).

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Chemical Consequences of the Removal of the Parathyroid Glands.—The discovery of toxic bases in large quantities in the urine of parathyroidectomized dogs is reported by the author. In every animal studied methylguanidin was present in the urine. When this substance was found in smaller quantities, other guanidin bases were present, so that the excreted guanidin nitrogen approached a constant. In addition to these cases others were observed, namely, betaimidazolylethylenamine, choline, neurine, and unidentified bases, although these were not distributed uniformly in the cases studied.

The histologic picture in the tissues of parathyroidectomized animals is one of cellular disintegration, particularly in such organs as the liver, kidney, and brain. Various degrees of chromatolysis are observed in the nuclei, and in some places the latter disappear entirely in large areas. The passive protein destruction which must accompany such tissue changes may give rise to basic products and thus account for the unusual compounds excreted.

Inasmuch as in animals which have been thus operated on the specific toxic symptoms can be provoked by the feeding of digested protein, it may be that the toxic effects are initiated by products of intestinal or even of parenteral digestion. Normally these derivatives are incorporated in some cell molecule or stored up in some form. In the case of parathyroidectomized animals, after feeding digested proteins, the products perhaps remain free and act as toxins. In animals operated on without further feeding, however, the symptoms increased in violence with short intermissions until death. The intensity of the symptoms doubtless corresponded with the rate of disintegration of body protein.

The pathologic condition resulting would thus appear to be a failure on the part of the cells to build up their protein. This part of the metabolism of the cell being generally regarded as the function of the nucleus, the changes found, together with the formation of free nuclein components, point to a nuclear atrophy. The histologic findings, moreover, show an active nuclein degeneration. Thus, it would appear that the parathyroid secretion is concerned with anabolic processes related to the synthesis of nuclear contents. W. F. Koch (Journal of Biological Chemistry, July, 1913; Journal of the American Medical Association, September 27, 1913).

* * *

Hyperthyroidism.—It has been demonstrated that 5- to 10- grain doses of thyroid gland will relieve some of the toxemias of pregnancy. The author has had brilliant results follow the administration of thyroid in some cases of vomiting of pregnancy. Besides, following its administration, the nervous symptoms of the menopause disappeared. That the thyroid is entitled to be termed a sex gland is evidenced by comparison of the conditions following thyroidectomy and following the climacteric. The author considers that a majority of the cases of girls from the eighth grade and the first year in the high school who are nervous and choreic are cases of hyperthyroidism. Thus, he had under observation a girl from the eighth grade who menstruated three times at two-week intervals, and was brought to him for the relief of nervous symptoms. She was unable to control herself in her recitations, clumsy in her movements, never quiet, talked loudly, and had a pulse of 120, together with marked tremor, palpable thyroid, and headache. The palms of the hands were always sweating. In spite of the patient's youth, this was probably a case of hyperthyroidism.

Some have claimed that a diagnosis of hyperthyroidism should be

made whenever there is present for a considerable time a tachycardia which cannot be explained upon any other pathologic theory provided several of the minor symptoms, though neither exophthalmos nor goiter, are present. In 2 cases the author was able to make such a diagnosis, which was later confirmed, in one case by exophthalmos and goiter, and in the other by exophthalmos.

The author has seen one case in which trauma seemed to have been a causative factor. A girl 12 years old, in playing ball, was struck in the neck. In a few days she developed a considerable goiter, which continued for some time without any hyperthyroidism, when rather suddenly, after three months, she developed violent symptoms of hyperthyroidism. The thyroid secretion had probably been blocked in the lymph-channels and then set free in a very large dose. B. S. Walker (Iowa Medical Journal, February, 1914).

* * *

Surgery of the Hypophysis.—The surgery of this organ is commanding the attention of the rhinologist because of the more easy approach to the pituitary body through the nose, entailing less mutilating operations than by the intracranial methods. Considerable difficulty may be encountered, however, because of the inconstancy of the anatomic relationship of the sella turcica and the sphenoidal sinuses. The fact that the septum dividing the two sinuses is seldom in the median line may be a source of considerable trouble. The sphenoid cavities may be approached by the palatine route, as proposed by König; or the endonasal route, as suggested by Hirsch. West and Citelli have each suggested a method, somewhat similar in approach to that proposed by Hirsch, but entering at the side. Any deviation from the median line increases the danger of these operations because of the important structures in the neighborhood. The palatine route necessitates a central incision through the velum, and the removal of the horizontal plate of the palate bones and posterior part of the septum. The sphenoidal sinus is then opened in the median line by destroying the bifurcated edge of the vomer and the crest of the sphenoid. The septum of the sinus is removed and the floor of the sella turcica attacked with a small chisel and an opening made to the extent of 1 cm. Hirsch advocates opening the superior osseous part of the nose like a double door by a "Y"-shaped incision, of which the vertical part follows the dorsal line and the two oblique branches divide the nose below the nasal bones. A submucous resection of the whole nasal skeleton is then performed and the sphenoidal sinus and sella turcica opened with a gouge between the two blades of a strong speculum, which separates the two layers of the mucous membrane and crushes the lateral masses of the ethmoid. The author thinks that the submucous resection of Hirsch is long, tedious, and unnecessary, and thereby sacrifices the entire septum, except the columnar cartilage. This method leaves the turbinates and ethmoids intact as far as possible. Radiography should always be availed of to determine if the anatomic dispositions will permit access to

the hypophysis by the route proposed. Jules Broeckaert (Journal of Laryngology, Rhinology, and Otology, July, 1913).

* * *

Treatment of Disease of the Thyroid.—The treatment of disturbances resulting from excessive or perverted thyroid functioning forms a debatable ground, the opinions of internists, surgeons, and röntgenologists differing widely. The reason for these conflicting views is that the primary cause and the differential clinical course of the various forms of hypertrophied intoxication are regarded with too little discrimination, no attempt being made to differentiate them beyond distinguishing between pronounced exophthalmic goiter and its rudimentary forms. The distinction between the nervous and the genuine thyrotoxicosis is very important. In particular the thyroid neuroses, Stern's "basedowoid," must be strictly distinguished from the other groups. Operative treatment in these cases is illogical from the theoretical standpoint and disastrous from the practical. Chvostek declares that in these cases, as well as in mild cases of true exophthalmic goiter in which there is a nervous predisposition, operative measures are not only useless, but may be directly harmful, as severe nervous after-effects are not unusual. On the other hand, in the genuine form of exophthalmic goiter, operative treatment is the most rational and radical of all measures, as also in iodine Basedow rebellious to prolonged internal treatment. Next in importance is repose for the patients, who should be gotten out of their ordinary environment. A trip to an altitude of about 3600 feet is often very favorable, starting first at 1500 feet. The patient should be well nourished, preferably with a carbohydrate-fat mixed diet. Galvanic stimulation of the neck is often useful; the anode being on the sternum and the cathode behind the angle of the jaw, a current of 1 or 2 milliampères should be slowly turned on for from one to three minutes and then slowly turned off. Or, the current may be sent through the thyroid. Mild hydrotherapeutic procedures may be useful adjuvants. Drugs are not needed, although phosphorus, arsenic, quinine, and bromides have been recommended. The adhesions that develop after radiotherapy interfere with operative treatment later. Bauer (Medizinische Klinik, May 25, 1913).

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Pituitary Extract in the Treatment of Hemoptysis.—The author tried intravenous injections of pituitrin in 12 cases of abundant—though not "fulminating"—hemoptysis, with excellent results. The dose used was 0.5 c.c., and the injections were made into a vein at the elbow. Whereas ice and morphine had proved ineffectual, the injection of the pituitary preparation was followed almost immediately by cessation of the hemorrhage in 10 out of the 12 cases. The patients continued to expectorate blackish material for a few hours, but the flow of fresh blood was clearly arrested by the remedy. Where the hemorrhage recurred on succeeding days, the same prompt relief was obtained. In the eleventh case the first injection alone proved effectual, while in the twelfth the

first injection, though soon successful in its results, at first caused sudden pallor, vertigo, and a rise of blood-pressure from 80 to 95 mm. Hg, with primary increase in the amount of hemorrhage for two or three minutes. The author thinks such phenomena can be avoided in the future by diluting the remedy with a few cubic centimeters of saline solution and injecting very slowly.

In discussing the author's communication, another observer pointed out that in 1909, with Boyé, he had shown that extracts of the *posterior* pituitary lowered the coagulation time of the blood where this was increased. Livon soon after found the coagulant properties of the extracts were so intense that no blood-pressure tracings could be taken from the dogs experimented on, the blood at once clotting in the cannulæ. He believed the results obtained to have been due rather to this coagulant action than to diminished blood-pressure in the pulmonary circulation. (P. E. Weil). E. Rist (Bulletins et Mémoires de la Société médicale des Hôpitaux de Paris, April 24, 1913; New York Medical Journal, September 6, 1913).

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Phosphorus, Nitrogen, and Lipoids in Thyroidectomized Animals.—In thyroidectomized dogs the content of total phosphorus and organic phosphorus in the brain, heart, spleen, and liver is diminished, but the content of inorganic phosphorus increased. In the kidneys all forms of phosphorus are usually increased. In the serum and blood-cells the total and organic phosphorus is increased. The nitrogen-content of the brain, liver, muscles, heart, and spleen is increased, that of the kidneys and serum diminished. In animals with hyperthyroidism the total and organic phosphorus is decreased in the brain, muscles, and heart, increased in the liver, kidneys, spleen, and serum. In thyroidectomized animals the total lipoid content as well as the individual lipoid fractions are decreased in the brain, liver, and muscles, while in the blood-serum they are increased. In dogs with hyperthyroidism the total lipoids and their fractions are reduced in the serum and in most of the organs with the exception of the muscles. The content of purin bases in thyroidectomized animals is increased. In the urine of animals with hyperthyroidism the ratio of phosphorus to nitrogen is at first lowered, then increased; the content of urea and amino-acids is diminished, and that of ammonia increased. In thyroidectomized animals the phosphorus-nitrogen ratio is similarly affected, but the content of amino-acids and purin bases is increased. A. S. Juschtschenko (Biochemische Zeitschrift, p. 64, 1913; Zentralblatt für experimentellen Medizin, June 15, 1913).

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Controlling Hemorrhage in Thyroidectomy.—The following procedure is described by the author: The usual transverse collar incision divides the skin and platysma. The upper flap is freed to the upper border of the thyroid cartilage. At a point opposite the middle of this cartilage the fascia over the vertical muscles is slit in a longitudinal

direction a finger's breadth inside the border of the sternomastoid muscle. The slit is extended upward and downward about 2 inches. The fascia of the sternohyoid and sternomastoid is drawn outward and the sternohyoid and sternothyroid muscles inward with narrow-bladed retractors. The finger is pushed down through this space until the carotid is felt, and then, by blunt dissection, the fascia just to the median side is penetrated. The finger is then in the loose areolar tissue in front of the longus colli. Next, retractors with longer blades are substituted, and the sternomastoid and carotid sheath drawn well outward, while the vertical muscles and thyroid gland are displaced inward Now the carotid tubercle should be located. About a finger's breadth below this the artery is sought with two pairs of blunt dissecting forceps When a short arc is freed, a ligature is passed around with an aneurism needle. This is tied, and the parts allowed to fall back into their places. The operation can then be proceeded with in the usual manner. E. O. Jones (Surgery, Gynecology and Obstetrics; Dominion Medical Monthly, February, 1914).

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Detoxicating Property of the Parathyroids in Nephritis.—The author had already presented evidence to the effect that the function of the parathyroids was to "detoxicate the internal secretion of the chromaffin system." In nephritis indications of excessive activity of this system—epinephrinemia, hypertrophy of the adrenals—are to be noted. The present paper reports the results of experiments executed to find out whether, by increasing the parathyroid function, at least some of the symptoms of nephritis might not be overcome. The experimental animals were rabbits in which nephritis had been induced by administration of uranium nitrate. Excessive functioning of the parathyroids was produced by removal of the thyroids, which exert an inhibitory influence over the parathyroids. It was found in 9 experiments that thyroidectomy actually did prolong life in the nephritic animals. That this effect is a direct result of the thyroid removal was negatived, however, by experiments in which simultaneous removal of both thyroids and parathyroids was found to produce no effect. That the excessive functioning of the parathyroids is not direct in its action in prolonging life, but is operative through the kidneys, may be concluded from the fact that after nephrectomy thyroidectomy is without effect on the duration of life. M Georgopulos (Zeitschrift für klinische Medizin; Zentralblatt für experimentellen Medizin, July 10, 1913).

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Relation of the Thyroid to the Parathyroids.—In one series of dogs the parathyroids were removed, whereupon severe convulsions nearly always appeared in a short time. When these had passed off, and the animals were left in an enfeebled, dyspneic condition, with dribbling of saliva and paralysis of the posterior limbs, thyroidectomy was performed in addition, whereupon the severe symptoms remained in abeyance for a

time, only to recur the more violently about three days later, and cause the death of the animals.

In a second series of dogs the entire thyroparathyroid apparatus was removed at one sitting. Already in twelve to twenty-four hours violent convulsions, polypnea, hyperthermia, and ultimately paralysis set in. The animals lived, however, from six to twenty-three days after the operation.

In a third series the thyroid alone was removed. The dogs showed no symptoms of any kind. Two of these animals, in which the parathyroids were then also removed, succumbed in convulsions within seventy hours. The other dogs remained well.

Conclusions: 1. The effects of thyroparathyroid extirpation become manifest very rapidly, often within two days. 2. Thyroidectomy performed after parathyroidectomy is rather frequently capable of alleviating the severe convulsions, but never preserves the animals from recurrence of the convulsions and death. A. le Play (Comptes-rendus de la Société de Biologie, Paris, 1912; Zentralblatt für experimentellen Medizin, June 15, 1913).

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Exophthalmic Goiter and Pleurisy.—A woman had had attacks of Basedow's disease at 38 and at 51 years, the latter attack being at the climacteric period. Two years later, while suffering from a surgical affection of the hand, the patient had another violent attack, lasting one month. Soon after, pleurisy—tuberculous, according to the clinical course and cytologic study—appeared, and with it the thyroid phenomena. The latter thereafter followed precisely the fluctuations in the pleurisy, the fluid returning three times and each time an exacerbation of the Basedow syndrome taking place. When the pleurisy finally disappeared, however, the syndrome mentioned did not, even growing slightly worse. The correspondence of the thyroid manifestations with the pleural phenomena in this case appears to the authors to have been due to irritation of the pleural fibers of the sympathetic. The case tends to show that the sympathetic plays an important rôle in exophthalmic goiter. Either certain Basedow symptoms—exophthalmos, tremor, tachycardia—depend directly upon the sympathetic, in which event the reason for the exacerbations of these symptoms in the present case is clear, or the sympathetic causes them indirectly, transmitting abnormal excitations to the thyroid or producing changes in its circulation. In the latter event the exacerbations in the exophthalmic goiter symptoms must have been due to congestion or secretory disturbances provoked in the thyroid. Hanns and Caussade (Société de Médecine de Nancy, April 23, 1913; Presse médicale, July 30, 1913).

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Hyperthyroidism with Auricular Fibrillation.—Report of the case of a woman who in childhood had had several attacks of rheumatism, and later had "stomach trouble" and asthmatic attacks. For one year she

had been nervous and losing weight, and for several years had at times had swollen feet and palpitation of the heart. There was diarrhea, tremor, and thyroid enlargement. On admission to a hospital the heart rate was from 120 to 160, many beats being too feeble to be appreciated by the examining finger; later the pulse rate and heart beat coincided fairly well, the rate being 80 to 90. No bruit could be detected. A noticeable feature was extreme arrhythmia, there being not merely the difference in rate at different times and with varying circumstances, as is characteristic of hyperthyroidism, but marked irregularity in strength of the beats, and also intermissions. Polygraphic tracings made by Greiwe demonstrated the presence of auricular fibrillation. As is known, the tachycardia of hyperthyroidism is very little influenced by digitalis, but in this case there was a fairly prompt response to digitalis, the heart rate being reduced to 80 or 90, with stronger systoles, as shown in a later polygram—although arrhythmia continued. E. W. Mitchell (Lancet-Clinic, February 7, 1914).

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Thymectomy and Thyroidectomy in Exophthalmic Goiter.—Report of the case of a young girl aged 22 in which Sauerbruch removed the thymus—weighing 49 Gm.—in 1911 because of severe myasthenia and exophthalmic goiter, after the right superior thyroid artery and vein had been ligated without result. The muscular weakness was greatly improved by the thymectomy, but the Basedow symptoms so increased at the close of the summer of 1912 that the tachycardia, the greatly enlarged and pulsating goiter, often producing considerable dyspnea, and the impossibility of closing the eyes caused the patient to be referred to the author for thyroidectomy. In October, 1912, the entire right lobe, the isthmus, and the left lobe with the exception of a small portion above were removed under local anesthesia. The intervention was well borne. The dyspnea and tachycardia disappeared, the pulse rate, when the patient was at home, remaining below 80 for weeks at a time, but when mental excitement was produced, for any reason, the rate increased up to 100. The exophthalmos persisted, though no longer sufficiently marked to impede closure of the eyes. A. Müller (Correspondenz-Blatt für Schweizer Aerzte, January 10, 1914).

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Lymphatic Cell Aggregations in the Thyroid.—Deposits of lymphatic tissue appear in the thyroid under various circumstances. Either local irritation or general disturbances may be present. The former may be chronic, mechanical, or inflammatory in nature. As a chemical irritant may be operative the qualitatively as well as quantitatively altered secretion of the Basedow thyroid, and perhaps likewise iodine medication (Hedinger). In other goitrous formations and in tumors of the thyroid a mechanical source of irritation may be presumed to exist, in chronic thyroiditis an inflammatory condition. The author found lymphatic cell aggregations in 75 per cent. of all Basedow thyroids, but only in 15

per cent. of other goiters. Such deposits are not infrequently to be seen macroscopically in apparently normal thyroids. They occur with considerably greater frequency in the female than in the male sex and are exceedingly seldom before puberty; the frequency of their presence increases with the age of the individual. Anemic and especially obese persons are particularly prone to show them. M. Simmonds (Virchow's Archiv, 1912; Zentralblatt für experimentellen Medizin, July 10, 1913).

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Antagonistic Properties of Guanin and Epinephrin.—The authors found that guanin in a measure diminishes the toxicity of epinephrin. It very markedly reduces, moreover, epinephrin glycosuria. As the pancreas is rich in proteins from which guanin is derived and even contains some free guanin, there is ground for believing that the latter substance plays a part in the regulation by the pancreas of the amount of glucose in the blood. Desgrez and Dorléans (Académie des Sciences, Paris, November 17, 1913; Semaine médicale, November 26, 1913).

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Thyroid Gland in Obesity.—Thyroid gland in therapeutic doses (0.2 Gm. of the dry powder, for example) has little effect on obesity. It increases the appetite and may thus fatten thin persons. Hypophysis treatment sometimes gives results, but it is on diet and physical exercise that one must rely. Léopold-Lévi (Congress of French-speaking Pediatricians, Paris, October 3 and 4, 1913; Journal of the American Medical Association, November 8, 1913).

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Concerning the Association of Acromegaly with Myxedema.—Report of a case of acromegaly complicated by the typical manifestations of myxedema. Thyroid treatment brought about some improvement, the skin becoming thinner and the patient losing weight. The author considers both pituitary and thyroid insufficiency to have been present in this case. L. Millioni (Riforma medica, vol. xxix, Nos. 38, 40, and 41, 1913).

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Hepatic Lipoids in the Treatment of Erysipelas.—The author reports 2 cases of facial erysipelas treated by local applications of hepatic lipoids, rapid recovery following. Attention is called to a new therapeutic measure which may yield gratifying results by reason of the antitoxic and antimicrobic rôle of the lipoids. Tilmant (Société de Médecine de Paris, October 10, 1913; Presse médicale, October 18, 1913).

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Colorimetric Determination of Epinephrin.—New method proposed consisting in the use of manganese dioxide as the reagent for developing a color with aqueous epinephrin solutions or suprarenal gland extracts. The color so developed is estimated by comparison with artificial color standards made by mixing cobalt chloride, gold chloride, and water. A. Seidell (Journal of Biological Chemistry, August, 1913).

Department on General Medicine

Cyclopedia of Current General Literature

Amebic Dysentery, Quinine in the Treatment of.—The author suggests the use of quinine as an adjuvant to ipecac in the resistant cases of amebic dysentery, in view of the successful results obtained by him in treating cases that failed to react favorably to emetine. While working on the hypothesis that the amebæ probably become immune to ipecac upon prolonged administration, he used quinine as an alternating remedy with varying results. While no attempt is made to consider quinine equally as effective as emetine (its amebicidal action *in vitro* is one-fifth as great), there need be no hesitation in considering it an alternate remedy when the latter becomes ineffective. Although quinine is less effective than emetine, the dosage by far compensates for this difference of action; it is also more easily available, and the patient is less susceptible to the discomforts that follow ipecac or emetine administration. Roger Brooke (Journal of the American Medical Association, March 21, 1914).

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Anaphylaxis, Mechanism of.—The author found experimentally that the period of anaphylactic hypersensitiveness is accompanied by a profound change in the composition of an ether extract of the blood and brain tissue. There is noted a marked increase in the content of soaps, fats, and lipoids. L. C. Soula (Académie des Sciences, Paris, November 8, 1913; Presse médicale, November 12, 1913).

Autoserotherapy in Serofibrinous Pleurisy.—Autoserotherapy is a reliable and safe method of treatment for all forms of serofibrinous pleurisy and should be employed in every case where pyemic infection is absent. A positive cure may be expected in over 80 per cent. of cases.

In secondary pleurisies autoserotherapy may not exert any beneficial effect on the primary cause of disease. It will cause rapid absorption of the pleuritic fluid, however, and in incipient tuberculous conditions has been known to arrest the progress of the disease.

In large effusions causing severe dyspnea and pain it is advisable to aspirate from 10 to 200 c.c. of fluid and, before withdrawing the needle entirely, reinject 2 to 3 c.c. under the skin of the patient. The result will be immediate relief from subjective symptoms and more rapid absorption of the exudate. The autoserum injections should be repeated every other day until decided improvement follows. It is advisable to employ only small doses of from 2 to 3 c.c., as most authors have had the best results with these amounts, and larger doses may not be without danger. Charles A. Pfender (Washington Medical Annals, March, 1914).

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Brachial Plexus Anesthesia.—Supraclavicular anesthetization, a method introduced by Kulenkampff, is described by the author. He reports a case showing a possible accident from this method, the only one so far re-

ported, and which he attributes to intoxication by the novocaine employed or to trauma of the brachial plexus.

There were no serious after-effects and the patient was approximately normal in twenty-four hours. The area for injection is the space bounded internally by the subclavian artery, externally and below by the clavicle, and in the depths by the upper surface of the first rib. Several guides for the introduction of the needle have been described, but there is no doubt that the subclavian artery should be the one employed, as there may be several variations in its course. The position of the artery having been absolutely determined, the needle is immediately introduced external to the vessel at a point directly above the clavicle. It is introduced slowly, and is directed downward, forward and inward. The best guide for the path of the needle is the spinous process of the second dorsal vertebra. The latter should be marked on the skin and the needle be pointed directly toward it. There is one clear indication that the needle is at the plexus, viz., the appearance of paresthesias in the hand and arm, in the medial or radial distribution, or in both; and nothing should be injected until they appear. If they appear in the medial distribution alone, the needle should be introduced a few millimeters deeper for the second half of the fluid, as the median is rather superficial at this point. The solution usually employed is 2 per cent. novocaine, combined with epinephrin. The anesthesia of the arm is usually complete enough for any operation, though it may be incomplete in about 15 per cent., or less, according to the experience of the operator. It has been used in about 250 cases successfully, but this is hardly sufficient experience to permit sweeping conclusions. Temporary paralysis of the diaphragm has been reported several times, and the author believes the method contraindicated for patients suffering from pronounced intrathoracic disease. The only other reported complication is a single instance of musculospiral paralysis. This procedure will prove a valuable addition to the methods of regional anesthesia when serious complications can be insured against. H. Neuhof (Journal of the American Medical Association, May 23, 1914).

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Calcium in Therapeutics.—Calcium not only enhances the coagulating power of the blood, but also renders morbidly permeable vessel walls less permeable. The latter effect is strikingly evident in hemorrhagic affections, such as scorbutus. This hemostatic effect can be anticipated only in case of bleeding by diapedesis. The absorption of calcium salts, moreover, depends on a variety of factors, especially on good gastric secretion and on the absence of fermentation acids in the intestine.

The author detected the abnormal permeability of the vessels responsible for the rebellious hemorrhages of scurvy in one case by applying a cupping glass for five minutes. The vacuum glass drew blood as before after two weeks of treatment by the ordinary measures. The author then gave the patient 3 Gm. a day of calcium lactate for five days, after which the cupping glass no longer drew blood, and complete recovery fol-

lowed after three weeks of the same treatment.

The author also found calcium lactate useful in 2 cases of iodine poisoning from a course of potassium iodide. A further useful application is in curing the cutaneous manifestations of anaphylaxis. In pleurisy with effusion the fact that the calcium renders the vessel walls less pervious has an unfavorable side, as this checks absorption. Its use is indicated, therefore, only when the effusion constantly recurs after puncture. When the walls of the pleura are severely modified by chronic inflammation, calcium has no effect. Animals develop cachexia when given calcium salts over a long period. In 15 cases of hemorrhagic nephritis the results of calcium medication were inconstant, and in some the condition was aggravated. Von den Velden (Therapeutische Monatshefte, Oct., 1913).

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Fractures of the Upper Extremity, Treatment of.—The majority of fractures of the clavicle occur in children and are of the incomplete or greenstick kind. Sometimes, especially in adults, there is overriding of the fragments, which is usually easily overcome by pressing the shoulder backward and outward. This can be done easily by having the patient lie flat on the back on a hard table and then making pressure on both shoulders. When the fragments come into position, the author applies 3 or 4 straps of adhesive plaster over the seat of fracture, one end extending 6 inches or so down the back and the other end similarly down the front of the chest. This simple dressing, with a sling to support the hand and forearm, is ample for most fractures of the clavicle and gives as good or better results than the more cumbersome ones. If it does not seem to hold sufficiently well, it can be supplemented with a posterior figure of eight bandage, or a Sayre dressing, or a Velpeau, or anything which seems to meet the special need. The dressing, whatever it is, is removed on the second or third day, the skin of the parts involved washed with alcohol, the arm and shoulder region lightly rubbed with the hand for a few minutes, and the shoulder and elbow joints gently moved. The dressing is then reapplied. This treatment is repeated two or three times a week. At any one of these changes, if the dressing does not seem to be holding the fragments well enough, it can be supplemented, or if supplementary dressings have already been used and seem unnecessary, they can be dispensed with. At the end of three or four weeks the vast majority of fractured clavicles will be well and the function of the limb practically perfect. The patient is discharged with caution against too great use of the arm for a few weeks more.

In fractures about the elbow the author has given up almost entirely the attempt to use acute flexion during the first few days, having too often seen the patient return for the second dressing with great pain about the elbow, much swelling, and sometimes some superficial gangrene from pressure. He starts these cases on an internal right angular splint, and at the second or third dressing, while the fragments are still plastic and when the swelling has subsided, slings the wrist from the neck, obtaining as acute flexion as possible

without too much pain, increasing the flexion at subsequent dressings for about two or three weeks, and then decreasing it again until all dressings are abandoned at the end of four or five weeks. When these cases are complicated with fracture or dislocation of the head of the radius, supination of the forearm seems better than the midposition, and the anterior angular splint is used until it seems wise to adopt acute flexion.

In fractures of the shaft of one or both bones of the forearm the author also prefers to start with the internal right angular splint. This splint is useful as an initial dressing for almost any fracture between the shoulder and the wrist, for it gives the greatest possible comfort to the patient during the first few painful days and maintains fixation as well as any other dressing. In fractures of the forearm it is found often that the ulnar fragments tend to drop to the ulnar side, and a change to the supine position, or the addition of a small splint applied to the ulnar surface, after correction has been made, is useful.

In attempts at reduction of Colles's fracture, soon after the accident, when no anesthetic is used, the author has found the most satisfactory method to be a sudden, sharp jerk of the wrist administered by clasping the fingers of one's own hands under the upper fragment and making pressure with the thumbs on the dorsum of the lower fragment; by abruptly pronating the hands, a surprising amount of force can be applied. This takes the patient's muscles off their guard and will be successful when a slower method of pulling may set the patient's muscles into spastic contraction and render reduction almost impossible and very painful. F. O. Allen (Journal of the Medical Society of New Jersey, January, 1914).

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Movable Kidney, Operation for the Fixation of.—After nephrorrhaphy many patients have complained of considerable discomfort, or even of actual pain, in the loin. The usual incision for this operation is an oblique one, close to, and parallel with, the last rib. After partial decapsulation, the organ is stitched by some method or other to the margins of the wound. Thus, the greater part, if not the whole, of the kidney becomes fixed in the space between the last rib and the crest of the ilium instead of lying, as normally, well under cover of the ribs. As a result of this abnormal position the ureter tends to become kinked, and thus obstruction to the flow of urine may occur; and further, the kidney is exposed to the pressure of the patient's clothes, or in certain movements it may be caught between the lower ribs and the crest of the ilium.

The author has practised for some years a modification of this operation which removes these objections, and which at the same time gives thorough fixation. The renal capsule is split from end to end along the convex border, and then stripped for about half its extent from the anterior and posterior surfaces of the kidney. The upper three-fourths of these two flaps of capsule are now folded back over the part of the capsule which has been left adherent, and are retained in that position by a few stitches passing from the free edge of

the flaps to the adherent capsule near the hilus, care being taken not to injure the pelvis. These stitches prevent the flaps from slipping back over the denuded renal surface. Three fixation stitches of strong catgut are next passed through the ends of the flaps, which are still free, at the lower end of the kidney. By this means, the part of the capsule in the grip of the stitch is twisted and puckered, and the tendency for the stitch to cut out is diminished. These stitches are not tied in the mean time. The kidney is now pushed back into its normal position, care being taken to place the upper pole behind the liver. One end of each of the three fixation stitches is now passed through the muscles and fascia forming the upper margin of the wound, near its posterior angle, and tied as they are passed. The kidney thus lies well under cover of the ribs, with its lower pole on a level with the upper margin of the wound. The cavity under the kidney is packed with gauze and a dressing applied. This packing is left undisturbed for six or seven days, but subsequently it is renewed every two or three days till the wound has closed. The gauze gives temporary support to the kidney and relieves the strain on the fixation stitches. By this method the kidney is fixed in its position by a broad band of fibrous tissue which has formed between its denuded surface and the posterior abdominal wall. Peter Paterson (Lancet, January 3, 1914).

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Nasal Accessory Sinuses in Children, Affections of.—Inflammatory affections of the nasal sinuses occur more frequently in children than is generally considered. Chronic sinusitis is not as frequent as in the adult, but both acute and subacute sinusitis are common, and many instances of postnasal catarrh are but symptoms of some inflammatory condition of the adjacent sinuses. Inflammation of the maxillary sinus at an early age is not infrequent.

Most important in the child are the inflammatory affections of the ethmoid cells, these cells and the antra being more frequently involved than the frontal and sphenoidal sinuses.

It is rather unusual to have a single sinus involved to the exclusion of the others.

The frequency of the infectious diseases in childhood and the concomitant inflammatory changes of the nasal mucosa explains why the sinuses should be involved during this period, and especially does this occur in influenza, scarlet fever, measles, pneumonia, and diphtheria.

In the newborn antral sinusitis may occur as a result of infection by vaginal discharges from the mother or from injury the result of instrumental delivery.

The recognition of the various sinus affections in the child is more difficult than in the adult, as the subjective symptoms are not clearly defined. Great weight should be attached to the intranasal findings. Transillumination is of great value, providing it is used in connection with a regulating rheostat to measure the intersity of the illumination. The author has found of considerable use, when its introduction was possible, the electrically illuminated pharyngoscope; with it one can explore readily the nasal areas and the recognition of posterior ethmoid and

sphenoid disease is much facilitated. Carefully made Röntgen plates are of great service, especially as regards the presence of pus in the antra or frontal sinuses, and previous to the tenth year the use of the stereoscopic radiograph is the most valuable single diagnostic medium available. A markedly swollen mucous membrane, however, will give a shadow more clearly than the presence of pus in a sinus.

The presence of frequent headache should always occasion suspicion of sinus inflammation, as should also tenderness to touch over the suspected sinus (frontal especially). In acute sinusitis, pain of an aching character or acute, neuralgic in type, even like that of the adult, is almost invariably present at some time. The degree of pain in the head, however, very often bears no relation to the severity of the inflammatory process of the particular sinus involved. A dull pain between the eyes in the presence of other intranasal symptoms strongly indicates ethmoid involvement. A symptom of great diagnostic value, when present, is the cessation of pain with the appearance of free nasal discharge, and the return of the pain when the discharge lessens or temporarily ceases. Curiously in purulent sinusitis in children the nasal chamber may be entirely free from pus during irregular periods of the day; care must be taken in considering this, as serious errors might otherwise result. If there is lymphoid tissue in the vault of the pharynx, most marked on the side from which this discharge comes, often the adenoids alone are not the source of the continued coryza from which the child suffers, but in addition there is a sinusitis.

In the so-called strumous child, where there is a purulent nasal discharge, with excoriated upper lip, marginal blepharitis, and frequently corneal ulcers, purulent sinusitis, usually of the antrum and ethmoid cells, exists, and, while serious organic osseous changes are not usually present, yet when they do occur the ethmoid structures are the ones most frequently involved. Polypoidal degeneration, when it occurs, is strongly indicative of a latent specific basis.

The treatment of sinusitis in the child should always aim to destroy as little tissue as is consistent with obtaining permanent results. Palliative treatment will cure the majority of acute sinus inflammations, *e.g.,* the use of warm alkaline sprays, or normal salt solution, and a weak epinephrin solution to reduce the congested mucosa, with, if the case is severe, rest in bed, the employment of laxatives and such general measures as may be indicated. The local employment of cocaine in the acute cases is usually unnecessary and is to be deprecated. Much relief may, however, be obtained by the external local application of heat or cold, or the use of the steam atomizer.

Where the sinus disease has continued and resists treatment, it is well to obtain a culture of the microorganisms present in the sinus and have prepared an autogenous vaccine. Intranasal treatment is indicated in all cases of sinusitis in children, but the turbinal tissue should as far as possible be preserved, and while it is necessary at times to remove the anterior end of the middle turbinate, removal of its entire structure to

reach the stomata of any of the sinuses is not warranted.

When possible, drainage should be obtained through the natural openings, and to accomplish this it is proper to remove enough tissue at such points as may be required.

When the frontal sinus is involved, attention must be paid to the anterior group of ethmoid cells before the inflammation of the frontal sinus will subside. Antral disease as a rule readily subsides under ordinary treatment, but in obstinate cases, after fracturing and pushing aside the inferior turbinate body, a large opening should be made through the inferior meatus into the sinus and the parts thus drained, the use of irrigation or not depending upon the character and chronicity of the purulent discharge. Aspiration and subsequent lavage are indicated in older children instead of more radical measures, when the antrum continues to discharge pus and does not respond to the usual treatment.

Enlargement of the middle turbinate body is a serious obstacle to the cure of inflammatory changes in any sinus, and until this has been relieved the sinusitis may prove most obstinate to treatment. Attempted removal of purulent material in the child by suction or negative pressure has not in the author's hands been of much value, and he is not certain but that it did not exercise a harmful effect.

Free drainage must be secured before cure can be obtained, and if intranasal treatment fails to procure this whatever radical operation may be selected should be performed. Before performing a radical external operation for frontal empyema on the child, however, it is well to remove the entire group of ethmoid cells. The antrum rarely requires external operation in children. Seymour Oppenheimer (Medical Record, February 21, 1914).

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Paratyphoid Fever, Fatal.—The author's case was of the type A, which, according to the literature, seems less fatal than the B type. The interesting and atypical features of the case are described as (1) its fatal results; (2) the lesions found in the intestine, viz., non-specific ulcers; (3) the lack of involvement of Peyer's patches; (4) the enlargement and great increase of endothelial cells in the mesenteric lymph-nodes, which have shown but little change in other cases, and the normal spleen. The following conclusions were reached: While paratyphoid is considered rare and not usually fatal, both of these ideas might be changed with closer scrutiny and study of cases of "clinical typhoid" with negative Widal tests and blood-cultures. The spleen is not necessarily enlarged or involved in paratyphoid of the A type. In health laboratories or in other places in which these examinations are made a serum should be tested for paratyphoid agglutinins, both A and B, after the serum has been pronounced negative three times so far as the true typhoid Widal is concerned. More accurate blood-studies and cultures should be made in all cases which resemble typhoid. An antiparatyphoid vaccine should be tried in the treatment of the disease, and as a measure of prevention such vaccines should be used either alone or in combination with typhoid vaccine. L. D. Bristol (Journal of the

American Medical Association, April 4, 1914).

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Periarticular Suppuration of Gonococcic Origin.—A periarticular suppuration of pure gonococcic origin may exist which may simulate an ordinary pyogenic tenosynovitis or cellulitis. It apparently follows an arthritis of the neighboring joint, which in itself may be non-suppurative. The articular and periarticular lesion may be absolutely distinct anatomically.

The history of a gonorrheal infection, the existence of a urethritis, the previous articular lesions, the absence of an external point of entry for the infection, and the presence of gonococci in the urethral or vaginal secretions may suggest the diagnosis. The certain diagnosis is made by the finding of gonococci, preferably demonstrated by culture, in the purulent exudate.

The condition is subacute and offers a good prognosis if the pus focus is promptly incised and the systemic infection combated by proper vaccine therapy.

Baur's contentions that in gonorrheal rheumatism the gonococcus does not live after the sixth day of the disease, and that the gonococcus cannot exist in the soft tissues around the joints, are unwarranted. DeWitt Stetten (Archives of Diagnosis, January, 1914).

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Pericarditis, Adhesive, Diagnosis of.—Retraction of the chest wall is not pathognomonic of adhesive pericarditis, as pleuritic adhesions may cause this funnel-shape of the chest during inspiration. But when the retraction is circumscribed along the left costal arch, between the parasternal and anterior axillary lines, and it pulsates, the author regards it as pathognomonic of the condition referred to. The pulsation is synchronous with the carotid pulse. The best way to examine for retraction of the wall is to lay one hand on the lower part of the sternum and the other on the spine opposite; then, as the patient takes a deep breath, one can feel that the chest grows narrower between the hands and perceive the characteristic systolic retraction much more distinctly than by simple palpation. The preference of the edema for the upper part of the body is also characteristic. Still another sign is the paradoxic engorgement of the veins in the neck during inspiration. The veins may show more plainly during inspiration than at other times. Röntgenoscopy may show that the entire heart moves with the excursions of the diaphragm. Tornai (Berliner klinische Wochenschrift, September 29, 1913).

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Phlebitis, Treatment of.—The entire body should be bathed daily with alcohol and water, supplemented with a soapsuds cleansing twice a week. Following such a bath the skin should be well rubbed, thus increasing the superficial circulation and drawing away blood from the point of disease. The bed-clothing should be light but warm. Flannel nightdresses serve best. If possible the involved part should be exposed to the direct sunlight for at least one hour daily. All cases seem to have a shortened convalescence upon following out this rule.

The alimentary tract should be very closely watched in order that the

bowels may move twice in each twenty-four hours. If they will not do so naturally, a mild cathartic should be given. Three times a week a high enema should be administered. The diet in suppurative cases should be liquid. The broths and soups should be strained, the fruit juices should not contain any pulp, and the milk should be diluted with water and the proper amount of lime water added. Water should be given very freely.

When suppuration is present, as a complication of the venous condition within a serous cavity, far better results are obtained if the patient be Ochsnerized, everything except water being withheld for intervals varying from three days to a week.

As for local treatment, in *acute* cases the limb should be elevated upon a well-padded inclined plane at an angle of 45 degrees, and wrapped in sheet wadding or absorbent cotton held in place by very light gauze bandaging. Under no circumstances should the part be massaged. It is well to bathe the skin with an alcoholic solution, using a soft sponge and avoiding rubbing. Dry the skin by fanning and then dust with talcum powder. Occasionally the powder can be omitted and olive oil used gently to bathe the skin surface. The whole dressing should be continuously heated by hot-water bottles so adjusted as to bear no weight upon the part. The temperature of the dressing should be evenly maintained at 110° to 115°, day and night. Once each twenty-four hours the dressing should be carefully removed and the membrane inspected.

Where ulceration of the skin has occurred over the site of the involved vein, hot bichloride of mercury fomentations should be applied, and these changed frequently and kept moist and hot. A week of this treatment will so antisepticize the area that the fomentations can be omitted, the area allowed to desiccate, and a dry dusting powder applied. The warm covering in these cases should be windowed over the area to be treated so that ready access to the ulcerated part is obtainable while the dry dressing as a whole is not disturbed. The dusting powders giving the best results are oxide of zinc, stearate of zinc (carefully pulverized and not allowed to cake), and subgallate of bismuth.

In *chronic* cases, if, when the patient lies down and the limb is elevated, careful digital milking will empty the tortuous channel, the case is amenable to a trial without operative procedure, for the time being at least. The patient is instructed to elevate the disrobed member at an angle of 45 degrees for from ten to thirty minutes daily. A properly outlined or close-fitting elastic or linen fiber stocking is to be worn continuously, except when the limb is elevated. The skin should be gently bathed thrice daily with an alcoholic solution, using a soft sponge, after which it should be dried by fanning and talcum powder dusted over. The patient should improvise an inclined plane cradle, properly padded, in which the affected member may rest during the night. Often elevating the foot of the bed eighteen inches will serve the purpose well. To avoid discomfort of the upper body the upper half of the mattress can be propped up with padding, or an extra pillow or two provided.

Chronic phlebitis is materially benefited by local alternate hot and cold sprays, douching, packs, or submersions. Either of these methods can be used, according to convenience, for they give like results. The submersion and spray combined are often the most convenient and are to be carried out as follows: Two tubs or pails are used, one containing water drawn from the cold-water tap (or, in hot weather, with a piece of ice added), and the other, water at 110°. The affected limb is first submerged in the hot water and held there thirty seconds, then in the cold water for fifteen seconds. This alternating procedure is gone through ten times, ending with the cold-water submersion. The part is then gently rubbed until the skin is dry and red, showing proper reaction. Gentle stroke massage in the direction of venous flow is carried out for ten minutes, the skin dusted with talcum powder, and the member properly clothed after the elastic support has been applied.

Where it is not feasible to use the submersion method, spraying with sponges of hot and cold water, or a nozzle spray attachment, serves the purpose very well, applied for the same length of time. Even when the submersion method is used, the spray may be employed to supplement it by treating the upper parts that cannot be submerged. When none of these methods can be carried out, hot and cold packs for the same periods serve well. By such treatment the vasomotor system is greatly augmented and the musculature of the venous walls stimulated to action.

If the tortuous superficial veins are emptied to a greater or less degree by the treatment, one is fully justified in advising operative methods for complete relief.

When the abdominal-wall veins are involved, posture treatment for ten-minute periods thrice daily aids greatly. This can be done while the alternating thermic treatment is being applied, with the patient lying flat on the back and the hips slightly elevated, supported on a pillow. In these cases the skin should be dried by gently rubbing up on the right side of the abdomen, across the top just below the ribs, down on the left side, and then in a circle with the umbilicus as center.

In nearly all chronic phlebitis cases strychnine, $\frac{1}{30}$ grain, or tincture of nux vomica in 10-minim doses four times a day, is indicated. Basham's mixture, Blaud's mass, and one or two of the bitter tinctures, as gentian, cinchona, or calumba, taken well diluted with water a half-hour before meals, are also indicated. Fowler's solution in 2-minim doses, well diluted three times a day before meals, and increased a minim a day until 10 minims three times a day are given, is useful in the average case. G. S. Foster (American Journal of Surgery, April, 1914).

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Pneumonia, Camphor Treatment of. —The author reports good results in the treatment of 6 cases of pneumonia, 3 of which were postoperative pneumococcic pneumonias. In 1 case he is convinced that without the administration of the camphor the patient would have perished. Her resisting powers greatly weakened by a severe influenzal infection, a lady 71 years of age had been up and about for several weeks when the

initial chill ushered in an attack of acute lobar pneumonia, which quickly consolidated the whole of the left upper lobe. Prostration was rapid and extreme, cardiac and vasomotor shock predominating from the first. The toxemia soon became profound, resulting in delirium and restlessness, insomnia, increased respiration, dyspnea, high temperature, right heart failure, diminished renal secretion, intestinal paresis as evidenced by persistent ballooning of the abdomen, gastric distention, wavering and intermittent pulse, and complete absence of cough and expectoration. This condition resisted all classical treatment, but the first injection, given on the second day of the disease, of 10 c.c. of 20 per cent. camphor oil made a decided impression. These injections were repeated every four hours, night and day, with the result that the patient recovered in the usual gradual manner—without crisis, which seems uniformly to attend the camphor treatment.

Although the injections in this case were given every four hours, the author advocates longer intervals between doses and advises that the following rules be adhered to: A 30 per cent. preparation of camphor in oil of sesame should be used. The physician should always see to it that the solution is of full strength and absolutely sterile. In preparing the remedy, the oil to be sterilized should be put in a bottle with a loosely fitting stopper, the sterilization taking place in a boiling water bath. Whenever the preparation is to be used it should be drawn (not poured) into the sterilized syringe, care being taken to prevent loss of camphor by volatilization. As soon after the initial chill as possible, 10 c.c. or 2½ drams (equal to 36 grains of pure camphor) per 100 pounds of body weight should be injected hypodermically. This should be repeated every twelve hours except in bilateral pneumonia and in severe toxemia. In those cases the injections should be given every six to eight hours. The syringe used should be a Luer, without rubber washers, of 10 to 20 c.c. capacity, or a phylacogen syringe may be used. The site selected for the injection should be the outer thigh or the abdomen. The point at which the injection is to be made should be carefully sterilized by washing and application of tincture of iodine. The injection should be made slowly and the oil gradually deposited below the subcutaneous fatty tissue and not into it. If these simple precautions are carried out there will be no trouble either in the form of abscess, sloughing of the skin, or immediate discomfort following the injections. The author has yet to observe the least difficulty in these directions. W. J. Cruikshank (New York State Journal of Medicine, February, 1914).

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Pulmonary Tuberculosis, Palliative Effect of Artificial Pneumothorax in. —The author reports 3 cases, all different in type, progressive, advanced, and hopeless, which were selected for lung compression to relieve the cough and expectoration and not with a hope of arresting the disease. In the former sense the procedure was successful. The author, therefore, would add to the indications given for lung compression the following: "Hopelessly advanced

cases in which after careful examination it is ascertained that cough and expectoration is being produced from a large cavity in one lung even though the other is badly infiltrated." His cases altogether numbered 14 and were selected from those which, after a fair test, did not respond to other well-tried methods of treatment. All compressions were made by the Forlanini method, with 0.5 per cent. novocaine anesthesia. The author believes that artificial pneumothorax can be successfully employed outside of the hospital or sanatorium if the technique employed is perfect. W. C. Voorsanger (Journal of the American Medical Association, May 9, 1914).

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Rheumatic Affections, Intravenous Injections of Sodium Salicylate in.— The author's experience with the intravenous administration of the drug comprises 12 cases of articular rheumatism of various degrees of severity, in which about 130 injections were used.

The two most important points to be observed in the giving of the injections were found to be: 1, to use only a very fine, sharp needle, so that the trauma to the vein wall may be as slight as possible, and, 2, to have the solution fresh and made with chemically pure crystalline sodium salicylate. The technique employed was as follows: A stock solution is made by dissolving 10 Gm. of C. P. crystalline sodium salicylate in 50 c.c. of distilled water which has been freshly sterilized by boiling. The drug is weighed and handled as aseptically as possible, and the solution after being made is not subjected to further sterilization. The solution should be perfectly colorless and, if protected from the light, will keep for several days.

A rubber ligature is applied to the upper arm sufficiently tightly to prevent the venous return flow, and, if necessary, the venous engorgement is increased by letting the arm hang down and by closing and opening the fist. The skin about the flexor surface of the elbow is sterilized by painting it with tincture of iodine. A 10 c.c. all-glass syringe, carefully sterilized, is filled from the stock solution, each cubic centimeter (16 minims) of which contains 3 grains (0.2 Gm.) of sodium salicylate. A fine, bright, sharp hypodermic needle is used. With the patient's arm fully extended and the vein fixed below by pressure of the left thumb the needle is thrust into the vein in the direction of the venous flow. In order to be certain that the point of the needle is within the lumen of the vein the piston is then slightly withdrawn. If a drop of blood appears at the mouth of the syringe the ligature is loosened and the proper quantity of solution injected. As the needle is withdrawn from the vein gentle pressure is made for a moment at the site of the puncture to prevent leakage of the blood into the subcutaneous tissue, and the iodine is then washed off with alcohol. No dressing is required for the tiny wound in the skin. In case a good-sized vein is available in each arm it is well to use the arms alternately, but the author has found no difficulty in using the same vein for a number of successive injections when necessary.

In most cases the dose was either 15 or 20 grains (1 or 1.25 Gm.) and the injections were given at twelve- or

eight- hour intervals over a period of from three to six days. Occasionally, in robust men, as much as 30 grains (2 Gm.) were given at a time, and as much as 120 grains (8 Gm.) given in the first twenty-four hours, without any unpleasant effects whatever. Indeed, one of the noticeable features of this method was the entire absence of shock, prostration, or other objectionable constitutional effect.

As regards the therapeutic effects, the relief of pain was prompter and more pronounced than is usual when the drug is administered by mouth. It was a common occurrence to see a patient who had been suffering intensely obtain almost complete relief for a number of hours after an injection, and to look forward with impatience to the next. In one extremely severe case, in which 130 grains a day by mouth had been given for three days with no effect whatever, improvement was seen almost immediately after the intravenous injections were begun. In the case of a young girl whose intolerance to the drug by mouth was complete the intravenous injections produced immediate relief and a rapid cure.

While the author is far from feeling that the method should replace mouth administration for routine cases, he is convinced that it has a field of usefulness. It solves most satisfactorily the problem of treatment of those patients who are quite unable to retain the drug when given by mouth. It should be tried in patients who show little or no response to the usual method. When the pain is intense it seems worth while to begin the treatment with a few intravenous injections before resorting to the usual method. Finally, the injections seem to have direct advantages over the ordinary method in cases with threatening heart complications and in the treatment of severe rheumatic affections of the eye, by reason of their more rapid action and accurate dosage. Lewis A. Conner (Medical Record, February 21, 1914).

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Ringworm, New Treatment for.—The following treatment has been found by the author rapidly curative: The part being first washed with a strong solution of sodium bicarbonate, it is next swabbed with a piece of lint moistened with spiritus ætheris (1 part of ether to 2 parts of alcohol) to remove the grease. It is next dried, painted with tincture of iodine (B. P., 2.5 per cent. of iodine) and an ethyl chloride spray immediately applied. It is best to work with a pair of ethyl chloride tubes in each hand, thus covering a larger area in quicker time. The deeper the disease process, the longer the spray must be applied. The spray is continued until the integument gets china white. In from twenty-four to forty-eight hours the patch of ringworm has became quiescent. Next tiny spots should be looked for and treated in a similar manner, when they will also disappear in from a few days to a week. In ringworm of the scalp 3 or 4 applications of iodine and spray are required, but on the face or smooth surfaces 1 application suffices. The author has succeeded in curing ringworm of months' standing in one week by this method, and it has never failed him. C. Hughes Foley (Lancet, January 24, 1914).

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Salvarsan and Neosalvarsan Injections.—The author answers the ques-

tion whether in place of the usual weak salvarsan and neosalvarsan solutions a more concentrated solution, with a correspondingly less amount of fluid, should be used in the following manner: When salvarsan is used, a weak solution is best, since it is decidedly less toxic than the concentrated solution; when neosalvarsan is used, the concentrated solution is to be urgently recommended, since the danger of oxidation is decreased in direct proportion to the less quantity of water used to make the solution. Physiologic salt solution is the best vehicle—10 c.c. for 0.75 Gm. of neosalvarsan. These injections are well borne, and cause practically no reaction. E. Schreiber (Münchener medizinische Wochenschrift, September 9, 1913).

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Stricture of the Esophagus, Diagnosis of.—The following method of diagnosing stricture of the esophagus was used by the author in certain cases in which the Röntgen diagnosis with bismuth was impracticable by the ordinary methods: Sausage skin was cut into lengths of about 50 mm., thoroughly washed, and put into a solution of 1 per cent. liquor formaldehydi and 10 per cent. glycerin. One end of the piece, the distal end, was tied with silk floss to make a bag, and the proximal or mouth end slipped over a rubber ferrule and tied. The bag as it is then is only a string, and the patient swallows it with the aid of a little water.

When the stricture admits a No. 15 French olive, it is best to keep the skin straight by running it over a capillary rubber tube. This is easily done by tying the upper end on the ferrule, holding it under a water tap, and allowing the water to carry the tube through. There should be a small metal end on the tip of the tube so that the skin can be tied without collapsing the rubber. The stomach content can then be aspirated so that one can see if the tube has passed into the cardia.

It is surprising to see how the skin can be swallowed through the smallest stricture. After it is down, a thick bismuth mixture is allowed to flow in, 20 c.c. at a time. After the operator is sure that the bismuth is down, the skin is pulled up a little and allowed to drop back so as to untwist any kinks existing. This operation of filling and pulling is continued until the bag is full to the pharynx; the patient is given a couple of tablespoonfuls of bismuth mixture to swallow outside the tube, a teaspoonful at a time, to fill any irregularities or pockets that the bag does not fill, and the Röntgen ray observation is then made. In removing the bag, if the stricture is small, the patient is placed face downward over the edge of the table and over a receptable and it is gently and firmly pulled out, which naturally takes a little time.

The advantage of the method lies in the readily obtained skin, the fact that the extent of the involvement below as well as above the stricture can be seen, and that a good outline can be obtained at an early as well as at a late stage of the process. A. C. Crump (Journal of the American Medical Association, May 9, 1914).

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Tuberculosis, Treatment of.—From observations of the effects of 56 varieties of treatment in over 1082 cases of tuberculous disease, the author concludes that tuberculosis, whether

acute general, acute pneumonic, bronchopneumonic, or chronic, as well as tuberculosis of any other special parts, is amenable to medical treatment only when there is proper elimination and when the infected area can be reached by the body fluids; otherwise surgical procedures are indicated. Tuberculosis of the skin, glands, bones, and special organs is, as a rule, of such a nature that medical therapy should be considered first and foremost.

Of the various treatments tried, but two showed clinically anything like a specified action upon the tubercle bacillus and tuberculous processes. These were garlic and mercury. Garlic contains a volatile oil, allyl sulphide, which is strongly antiseptic and seems to have a remarkable power of inhibiting the growth of the tubercle bacillus. It is eliminated by the lungs, skin, kidneys, and liver, and is oxidized into sulphuric acid in the system. Applied locally, it is freely absorbed by the skin and penetrates the deeper tissues. Garlic gave the author the best results, and would seem equally efficacious, no matter what part of the body be affected. The dosage used internally was 1 dram of the expressed juice or 2 drops of the essential oil three times a day; externally poultices of crushed bulbs, 1 part, with 3 parts of lard, or a garlic ointment (50 per cent. of the juice in petrolatum), were applied daily.

Mercury biniodide, $\frac{1}{30}$ grain three times a day internally, and unguentum hydrargyri externally, gave the best results next to garlic.

In many cases of severe toxemia with continued septic temperature more active elimination is necessary. In such cases the best results were obtained by one of the following treatments:—

1. Normal saline, 220 c.c., at 106° F.; also of value in hemorrhagic cases, intravenously.

2. Guaiacol, 32 drops in 220 c.c. of sterile water, at 106° F., intravenously.

3. Mixture of sodium salicylate, guaiacol, and glycerin, of each, 32 grains or drops in 220 c.c. of sterile water, at 106° F., intravenously.

4. A 2 per cent. aqueous solution of pure phenol (Bacelli's treatment), 1- to 5- c.c. doses hypodermically or by Murphy's drip in 10-c.c. doses; the kidneys must be watched.

Cases of continued septic temperature, not improving from the above, should be treated surgically (incision and drainage, thoracotomy, thoracoplasty, and pneumotomy).

For making the soil unfavorable for the growth of the tubercle bacillus through an effect on body fluids, phosphorus, $\frac{1}{1000}$ grain t. i. d., and Fowler's solution, 1 drop t. i. d., gave the best results.

Tuberculosis vaccine was found to be contraindicated in septic cases, but rendered valuable service after elimination of the toxemic condition, and in cases not of this type. M. W. McDuffie (Interstate Medical Journal, March, 1914).

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Tuberculous Bone Abscesses and Sinuses, Tuberculin Treatment of.— Better results are obtained than from other measures by the use of tuberculin, both locally and systemically, in the conditions referred to. The author uses tuberculin residue systematically, and the old tuberculin in abscesses and sinuses. One should

remember to treat first of all the primary focus. As nature demands absolute rest at all times, one should endeavor to secure this, and recognize that the treatment of the abscess or sinus is secondary. Good results are had also from using olive oil, strychnine, tincture of nux vomica, potassium iodide, tincture of ferric chloride, and syrup of the iodide of iron.

Where the abscess is very large and deeply placed, there being no pressure symptoms, if the part is put at rest by traction and fixation and the patient allowed plenty of fresh air, sunlight, and good food, the abscess contents will become absorbed and encapsulated. In cases with a great deal of pain, however, the author advocates incision, evacuation of the abscess, and immediate closure.

All abscesses secondarily infected should be opened at once and swabbed out with phenol followed by alcohol. In some convalescent cases of bone tuberculosis, where the focus is circumscribed and easily accessible, for example in the condyles of the femur, erasion may be done, always with the use of an Esmarch bandage and a tourniquet. The cavity should be swabbed out with tincture of iodine and filled with the following mixture: Yellow wax, 1 part; wool-fat, 5 parts; bismuth subnitrate, 15 grains to 1 ounce of the mixture, after which the incision is closed.

In cases that refuse to heal under local treatment, and ultimately result in the formation of an obstinate sinus, he has had some success by the use of Beck's bismuth paste, or, preferably, chalk mixture. A 10 per cent. ointment of scarlet red in petrolatum was also used with success. Before using the tuberculin in sinuses, he tries to get rid of the secondary infection by curetting the walls of the sinus, followed by an irrigation of quinine and urea hydrochloride or potassium permanganate solution. After doing this three times a week for two or three weeks, the tuberculin treatment is begun.

Each 10 minims of the old tuberculin preparation used equals 0.5 mg. of tuberculin in normal salt solution, with 0.25 per cent. of phenol. One minim of this is added to 150 minims of normal salt solution as an initial dose and injected three times a week. The second week the dose is increased to 1 : 100, the third week to 1 : 50, and the fourth week to pure, or full strength. The dose is, of course, governed by the reaction, both local and systemic. There is some systemic as well as local reaction after the first injections, but this usually disappears entirely after the third treatment. To bring the tuberculin into immediate contact with the walls of the sinus, tuberculin solution is injected into the depths of the sinus by means of a syringe or a small soft-rubber catheter, which is withdrawn as the injection is made. The sooner one gets the sinus closed or thoroughly plugged, aside from the treatment of the granulation with the tuberculin or some other substance to stimulate the walls of the abscess or sinus, the better the results. W. S. Niblett (Interstate Medical Journal, March, 1914).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

1. Internally: Equal parts of precipitated sulphur and milk-sugar; patient to swallow several times a day as much as is held on tip of a penknife. 2. Externally: Paint at night with a mixture of 10 parts of sulphur, 25 parts of alcohol, and 5 parts of glycerin. 3. Regulate bowels. 4. Meat, eggs, cheese, and sugar to be avoided. 5. Later, a ten- to fourteen- day course of Röntgen-ray exposures, one-third or one-fourth erythem doses being applied at 6 or 8 sittings, to a total of one and a half erythem doses. 6. Four or five weeks after this course, application of mercury quartz lamp for twenty or twenty-five minutes. The skin is to be carefully protected for eight or ten days and then gone over with the comedo extractor, any red spots left being treated with sulphur. *Kromayer.* 357

Acne Keloid. TREATMENT. In early cases small, isolated nodules may be excised; they do not recur if the incision is free of the circumscribed sclerotic mass constituting the nodule. *Adamson.* 357

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Alopecia Areata. TREATMENT. (1) The B. P. unguentum hydrargyri iodidi rubri (diluted from 4 to 2 per cent.); (2) the unguentum hydrargyri oxidi rubri, with acetum cantharidis, ℥j to ℥j, and (3) equal parts of sodium chloride and petrolatum found seviceable in this condition. Pure phenol often gave good results. Causes of peripheral nervous irritation, such as carious teeth, errors of refraction, or aural defects, to be investigated. In severe cases pilocarpine nitrate, injected into the scalp every week or fortnight in doses of 1/10 to 1/6 grain, is sometimes beneficial. *Dore.* 358

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

In amenorrhea, relative or absolute, ovarian extract considered best remedy by author. *Bandler.* 91

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Angina Pectoris. TREATMENT. Concussion at level of seventh cervical vertebræ, together with hypodermic injection of 1/10 grain (0.006 Gm.) of pilocarpine, to increase vagus tone, gives relief more promptly than does morphine. *Jarvis.* 160

Ankylostomiasis. TREATMENT. Betanaphthol in 30-grain (2 Gm.) doses given the first thing every morning is likely to prove more effectual than eucalyptus or thymol. Starvation of patient during such treatment is unnecessary; in bad cases it may be harmful. *Keith.* 165

Arthritis, Chronic. TREATMENT. Injections of phenol-camphor used with benefit. Must be made only into joint, never into spongy bone. Formula: Phenol, 30; camphor, 10; alcohol, 30. Only 0.5 or 0.25 c.c. is injected at one point, except in streptococcic processes, where 2 c.c. are necessary. *Pohl.* 235

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchitis, Acute. TREATMENT. Inhalations of recently prepared tincture of iodine from wide-mouthed bottles found to cure bronchial catarrhs in four days. Inspirations —from 4 to 8 or more at each sitting—to be more or less deep according to severity of case. Inhalations to be repeated 5 or 7 times a day. If much mucus, expectoration to be assisted by usual remedies. In children iodine tincture may be dropped on pieces of cotton to be laid on pillow (over oilcloth) while patient sleeping. *Torri.* 303

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing, exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the

temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* Page 55

Burns. TREATMENT. (1) Hypodermic injection of morphine and atropine. (2) Immerse burned area in, or cover with light cloth moistened with, cold water to which has been added 1 teaspoonful of sodium bicarbonate or chloride per quart; continue until morphine effect manifest. (3) Spray or mop burn and surrounding surface with hydrogen dioxide, mop with dry gauze, apply gauze strips dipped in 2 per cent. picric acid solution in dilute alcohol, and cover with thin layer of cotton and adhesive strips or bandage. Allow dressing to remain till soiled, then reapply. (4) About third day, open blisters and mop away contents. (5) Where sloughing: Remove dead tissue as it loosens, cleanse surface with dioxide, dry, mop with picric solution, put on strips of rubber tissue previously kept in 1:1000 mercury bichloride solution, and cover with picric acid compress and cotton. *Plain.* 299

Cancer. DIAGNOSIS. Marked diminution of the area of cardiac dullness in the recumbent posture, as determined by percussion, found in 87 per cent. of 111 cancerous cases and only 16 per cent. of 107 noncancerous cases. This sign may be present in cancerous cases that show no wasting. When the sign is present, diagnosis of carcinoma should be rejected only after careful consideration. In some cases the sign has appeared early enough to enable successful resection to be carried out. *Gordon.* 234

Cancer, Gastric. DIAGNOSIS. Positive or negative diagnosis made by serial röntgenography in 616 cases. Of 97 cases operated on, diagnosis found absolutely correct in 94. Gastric cancer at any stage, or indurated gastric ulcer, can be detected by this method as accurately as renal calculi or bone fractures. *Cole.* 301

Cellulitis. TREATMENT. Packing infected arm from fingers to shoulders in hot mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection promptly. *Freese.* 304

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Corneal Ulcer. TREATMENT. Bathing part with 1 per cent. ethyl hydrocupreine solution for one-half minute every hour, six hours first day and twelve on next, found rapidly effectual in a case of ulcus serpens with hypopyon from chronic dacryocystitis. Sac expressed and conjunctiva cleansed with boric acid before each treatment with ethyl hydrocupreine, which was dropped on the ulcer. Practically specific against pneumococcic infections. *Wiener.* 168

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solution. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delirium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* 110

Dengue. TREATMENT. Three out of 7 cases were rapidly improved by administration of 30 drops of a 1:1000 solution of epinephrin by the mouth. Epinephrin is likely to prove useful in shortening convalescence in this disease and in mitigating the grave cases. *Khoury.* 329

Diabetes Insipidus. TREATMENT. Case in which injections of pituitrin caused marked, though but temporary, inprovement. *Farini.* 277

Diabetes Mellitus. DIAGNOSIS. Frommer's test recommended for detection of small amounts of acetone. Treat about 10 c.c. of urine with 1 Gm. of sodium hydroxide in substance and without waiting for it to dissolve; add 10 or 12 drops of a 10 per cent. solution of salicylaldehyde in absolute alcohol. Heat to 70° C. In the presence of acetone, marked purple-red color develops at zone of contact with alkali. This test indicates presence of 0.000001 Gm. of acetone. Urine must be diluted so that its specific gravity is about 1.01. *Muhlberg.* 232

TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.*, of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often causing glycosuria to disappear. *Cornwall.* 110

Dry vegetable diet recommended for cases in a state of acidosis. Patient to take daily 10 ounces (300 Gm.) of dried legumins (peas, beans, lentils), 5 ounces (150 Gm.) of butter, 3 to 6 eggs, and 3 to 6 aleuronat or gluten rolls. Green legumins may also be given. Soy beans may be used. This diet to be fol-

lowed at least 3 days at a time. The starch it contains is better utilized than that of other foods, glycosuria often being not higher than under a diet poor in carbohydrates. The diet also combats nitrogenous loss; somnolence and anorexia, where present, often disappear, and diaceturia diminishes. *Labbé.* Page 300

Diphtheria. TREATMENT. Iodine ointment used locally in 30 cases. With 2 cotton pledgets secretions and false membrane were first removed and the surface dried, and a third pledget, smeared with the ointment, was then rubbed on the affected surface and surrounding area. This was done every 3 hours, or in severe cases every 2 hours, until improvement occurred. Many cases cleared up within a few hours, becoming free of false membrane on the second or third day. *Thomas.* 364

Dysentery, Bacillary. TREATMENT. In acute form: (1) Rest and warm covering; (2) only small amounts of food at a time; (3) calomel at the outset; (4) acid drinks; (5) enemata of saline or soda solution or of methylene blue. In chronic form: (1) Rest; (2) enemata of 1:500 or 1:1000 silver nitrate, 0.25 to 0.5 per cent. tannic acid, 1:500 or 1:1000 thymol, 1 to 2 per cent. resorcinol or creolin, or enemata of gum arabic mixed with bismuth subgallate or iodoform; (3) phenyl salicylate, tannigen, ichthyol, or calomel internally; (4) serum treatment, 10 c.c. in mild cases, 10 c.c. twice at six- to ten- hour interval in medium cases, and 40 to 60 c.c. in severe cases, not exceeding 20 c.c. at a time when serum used daily; (5) appendicostomy or cecostomy with irrigation in severe cases. *Bassler.* 111

Dysmenorrhea. TREATMENT. Cocaine applied to tuberculum septi in nose and anterior portion of inferior turbinate on both sides, followed by application of trichloracetic acid over these spots, in 93 cases. Four applications made between periods. Cases with premenstrual headache, nausea, and colic at onset of flow—but without organic pelvic lesions—completely relieved. Of 81 cases sending subsequent reports, 48 had been cured and 14 improved. *Mayer.* 167

Atropine found very useful, except in cases with high blood-pressure, when pressure must be reduced and cause sought and removed. *Stolper.* 235

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* 11

In mild acute cases paint on lesions an aqueous solution of picric acid several times daily; in more severe cases apply wet dressings of the acid, held by facial mask. Prompt and gratifying results. In subacute and chronic types cure hastened by beginning treatment with two or three days' application of picric acid solution. *Wilcox.* 176

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Epilepsy. TREATMENT. Four patients with severe essential epilepsy treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic. Considerable benefit. Dose of fluid injected, 3 to 5 c.c. biweekly or weekly. Improvement striking both as to severity and frequency of attacks. In some, petit mal took place of grand mal. Greatest improvement noticed especially if injected fluid was taken from other patients during recurrent attacks, no matter how slight the latter. *Gordon.* 235

Epistaxis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin brought early relief in 5 cases. *Citelli.* 279

Epithelioma. TREATMENT. Concentrated sunlight, focused on growth with ordinary magnifying glass, found effectual. Useful where X-rays and radium not available. Invariably successful in obstinate recurrent ulcerative patches on face or nose. Focus sunlight on sore for ten or fifteen minutes at a sitting. If scab present, concentrate rays till burning is felt, then lengthen focus to cover wider area. Induce burning again every few minutes. Treat every day or two till scab easily removed, then apply a little cocaine and after three or four minutes apply rays so as almost to cauterize base of ulcer. Alternate with milder applications for fifteen minutes. Under milder treatments thereafter, at longer intervals, cure usually complete in three to six weeks. *Seelye.* 166

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

In facial erysipelas: Have beside bed bowl of boric acid solution in which ice is placed. Keeping cloths frequently moistened with the solution continuously on face effectually relieves pain and burning. Where leg or arm involved: Wet dressings of boric acid or aluminum acetate. In migratory cases: Ichthyol may be applied or surfaces painted with picric acid solution. *Erdman.* 112

Pyramidon used in 20 cases with uniformly favorable results: Diaphoresis, antipyresis, sedation, fading of eruption, which ceases to spread, and improved general condition. Diuretic beverages also given. Locally, following ointment used: Phenolis, camphoræ pulveris, ana gr. xv (1 Gm.); adipis lanæ hydrosi, petrolati, ana ℥ss (15 Gm.). *Satre.* 167

Discomfort and pain more rapidly relieved by picric acid solution than other agents, and edema disappears promptly. *Wilcox.* Page 176

Erythema. TREATMENT. Epinephrin used in 3 cases of erythematous taches of the face ("red nose"). A 1:1000 solution was given internally in 5-minim (0.3 c.c.) doses in water 3 times daily half an hour before food, and the treatment continued during five to six months (with short intervals). The erythema almost entirely disappeared, and a year and a half after treatment it had not reappeared. No bad effect on the heart or blood-pressure was observed. *Rothmann.* 348

Felon. TREATMENT. Mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection in an unusually short time. *Freese.* 304

Fracture of External Malleolus. TREATMENT. Case of oblique fracture of fibula, involving malleolus, in which, great pain continuing after splinting, the malleolus was exposed by rectangular incision and, after detachment of external lateral ligament, entirely removed. The foot was splinted at a right angle to the leg. Pain ceased, and on the twelfth day the patient could stand on the foot without discomfort. Similar treatment recommended for all detached external malleoli. *Bland-Sutton.* 360

Fracture of Femoral Neck. TREATMENT. In adults the author recommends the addition of a side pull to the Buck extension. The side pull is exerted on the upper end of the thigh by means of a weight and pulley, the latter being placed opposite the crest of the ilium. It can be attached to the wall, a standard, or the side of the bed, and should be so adjusted that the pull is upward and outward at an angle of 45 degrees. The amount of weight at the foot of the bed should be sufficient to overcome the shortening, and the side weight about one-third of the foot weight. A well-padded splint of surgeon's felt, or sole leather, should be applied to the inner and under sides of the thigh, coming well up to the perineum, and fastened to the thigh by adhesive plaster encircling the limb. A band made of several layers of gauze or cheesecloth is convenient for the side pull. It should be fastened to the splint by adhesive plaster. By shortening the lower arm of this gauze the limb can be rotated inward, thus avoiding eversion. *Moore.* 361

Fracture, Ununited. TREATMENT. Osmic acid, 0.02 Gm. in 1 per cent. solution, injected directly into focus in a case of ununited fracture of fibia and fibula, rebellious for six months. Injection repeated 3 times in two weeks. Patient discharged two weeks later. Stimulating action of the acid on periosteum and marrow confirmed in rabbit experiments. *Segrè.* 307

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ℥iiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

Gastric Atony, Acute. TREATMENT. Continuous lavage of stomach through nose recommended. Cocainize nose and work soft oiled tube with 8 to 11 mm. lumen down into stomach. Attach longer tube and carry to receptacle. Amounts up to 5 liters thus drain away. Keep outlet of tube at level of bed to prevent aspiration of mucous membrane. *Grosser.* 305

Gastroenteritis, Infantile. TREATMENT. *B. lactis bulgaricus* in tablet form administered in 55 cases, varying in severity from moderate degrees of infection—6 stools a day—to the most grave—20 or more. From 3 to 10 tablets a day were given to each infant, according to the gravity of the illness. Results: 43 gained in weight; 2 lost; 3 gained and later lost, and 7 showed no change. There were no deaths. The temperature came down to normal within one to three days, and in two or three days the stools became yellowish or brown, well formed, and free from curds, mucus, and blood. *Schwartz.* 364

General Paralysis. TREATMENT. Remissions may be prolonged by suitable doses of tuberculin (1/1000 to 1/5000 mg. of tuberculin residue). *Jackson.* 236

Glaucoma. TREATMENT. In non-inflammatory glaucoma, when operation is consented to, Elliot's sclerocorneal trephining is by far the safest procedure and the most productive of results. In 29 cases thus treated there were no serious complications at operation in any case. Seven eyes with absolute glaucoma were preserved that formerly would have been removed. In 7 other eyes which were sightly a small degree of vision was gained by the operation. In the remaining 15 the eyes gained considerably in vision and usefulness. *Reber.* 362

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* Page 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Colloidal silicon injections used with benefit in a case of simple goiter. Trial of this measure is advised in both simple and exophthalmic goiter before operation is resorted to. *Suard.* 345

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Report of cases improved by administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided among twenty days in each month. *Gaultier.* 90

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1) Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2) grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* 48

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made. *Wolff.* 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomentation applied for five or ten minutes twice, and followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* 50

Hemoptysis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin nearly always brings relief in average cases. Where first injection fails, give a second, and later if necessary a third, the latter intramuscularly. *Citelli.* 279

Hemorrhage, Cerebral. TREATMENT. Venesection used with good results and recommended in cases of apoplexy in full-blooded patients with blood-pressure of 200 mm. or more. Amount of blood let in author's cases, 12 to 48 ounces. Where vein at elbow not easily found in stout persons, there are usually varicose veins in legs which can be opened. *MacFarlane.* 121

Hernia. TREATMENT. Inversion of hernia recommended in patients who take anesthetic poorly and maintain strong expiratory efforts, forcing viscera into sac under pressure. Primary union and cure of hernia in each of author's 7 cases thus dealt with. *Haynes.* 170

Herpes Labialis. TREATMENT. Picric acid solution causes rapid drying of lesion and tends to prevent extension. *Wilcox.* 176

Hodgkin's Disease. TREATMENT. Benzene, 5 minims (0.3 c.c.) three times daily at first, then increased to 10 minims (0.6 c.c.), caused marked regression of enlarged nodes, beginning two weeks after treatment begun, in a case previously treated unsuccessfully with X-rays. The 10-minim dose was continued for six weeks. *Lawson and Thomas.* 173

Hyperchlorhydria. TREATMENT. Cream diet considered useful. (See Ulcer, Gastric.) *Nichols.* Page 169

Following measures recommended: (1) Magnesium oxide, combined with sodium sulphate and belladonna in small amount. (2) All food to be well cooked and most carefully minced. (3) Patient to take 2 or 3 meals at two-hour intervals in forenoon, but nothing after lunch until 7 P.M., when only porridge to be taken. (4) Fluid intake to be generally diminished and restricted to hours when stomach not filled with food. (5) In severe cases, or where gastroptosis: Rest in bed for two or three weeks. (6) Hot compresses twice daily for two hours; cold compresses at night. (7) If hyperacidity arises on basis of a catarrh: Rinse empty stomach in morning with 1 : 1000 salicylic acid or 1 : 500 silver nitrate solution. (8) Bowels to be carefully regulated. *Schmidt.* 302

Hyperthyroidism. TREATMENT. Injection into enlarged thyroid of 1 to 4 per cent. solutions of quinine and urea hydrochloride caused marked improvement in 3 cases. *Watson.* 265

Ileus. TREATMENT. Continuous lavage of stomach through nose recommended in duodenojejunal occlusion, postoperative bowel paralysis, ileus from adhesions, spasmodic contraction from peritonitic reflexes, and vicious circle after gastroenterostomy. (See Gastric Atony, Acute.) *Grosser.* 305

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Infections, Local. TREATMENT. Following summary of serviceable measures present: *A.* Inflammations with slight serum exudation, but with redness, heat, swelling, pain, and loss of function: 1. Rest. 2. Elevation. 3. Hot, wet dressing.—*B.* Where much serum exudation, but slight tendency to necrosis: 1. Incision. 2. Place gauze in wound saturated with Chlumsky's solution. (Camphor, 60 parts; phenol, 30; alcohol, 10.) 3. Wet dressing; keep wet. 4. Remove gauze in twenty-four hours. 5. Insert rubber drain. 6. Apply wet dressing.—*C.* Where marked necrosis: 1. Incision. 2. Drainage. 3. Wet dressing. 4. After inflammation receded, Durante's solution. (Iodine, 1 part; potassium iodide, 10; guaiacol, 5; glycerin, to make 100.) 5. Dry dressing. *Hoag.* 307

Insanity. TREATMENT. Recovery in manic-depressive insanity may be hastened by stimulation of leucocytosis by injection of 1 c.c. of terebene subcutaneously in the flank. *Jackson.* 236

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intertrigo. TREATMENT. Paint picric acid solution on surfaces and separate them with thin layers of absorbent cotton. In the more severely infected cases wet dressings of picric acid. Prompt results. *Wilcox.* 176

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valuable for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Lumbago. TREATMENT. Salicyl compounds or a 10- or 20- grain (0.6 or 1.2 Gm.) dose of quinine at onset of condition useful. Rochelle salts, ½ to 1 dram (2 to 4 Gm.) every hour or two until urine alkaline and bowels freely moved, also valuable. "Walking the lumbago off" may succeed if free perspiration accompanies the exercise. Turkish bath in early stage safer and more effective. Later: Rest, dry cups locally, deep massage, faradic current, and, if salicylates fail, iodine, in vegetable protein combination. *Henry.* 175

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Gold and potassium cyanide injected intravenously in 12 cases. Single dose, 0.01 to 0.05 Gm. Results good. Course of 12 to 14 injections followed by interval of two to three weeks, after which another treatment given. Even in severe cases, therapeutic results better than with tuberculin and other measures. *Poór.* 236

Mammary Abscess. PROPHYLAXIS. Threatened mammary abscess underwent ab-

sorption in 2 or 3 cases soon after administration of pituitary extract. *White.* Page 283

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation, in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Osteomalacia. TREATMENT. Case in which excellent results obtained from epinephrin, injected in doses of 8 minims (0.5 c.c.) of 1:1000 solution, daily, in 2 series of 9 injections each. Patient finally discharged cured. *V. Salis.* 278

Ozena. TREATMENT. Use of sugar recommended. For first week or two surgeon should carry out treatment himself, and precede sugar by removal of crusts from nose, softening them if necessary with hydrogen dioxide or sodium bicarbonate solution. Patient to use nasal syringe once daily. After crust removal, massage mucosa with cotton-tipped probe; then nostrils may be packed with ribbon gauze soaked in simple syrup, to be removed in twelve hours. Repeat this treatment on alternate days. After a fortnight patient can insufflate powdered sugar himself. *Harry.* 175

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Placenta Previa. TREATMENT. In marginal variety, inject 30 minims (2 c.c.) of pituglandol and at once rupture membranes. In central variety, according to extent of dilatation, perform version or introduce metreurynter and give pituglandol. Metreurynter generally expelled spontaneously in one-half hour. Then perform version and give second dose of pituglandol. *Gall.* 280

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.*, daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Vaccine treatment advised. First give polyvalent stock vaccine of pneumococcus and streptococcus, of each, 30 million, as soon as possible. Make sputum smears and cultures, blood-cultures in early cases, lung puncture in late ones, and prepare autogenous vaccine. If no definite response in twenty-four to forty-eight hours, repeat or preferably give autogenous vaccine. If still no response in thirty-six or forty-eight hours, double the dose. If there is response, as shown by improved clinical symptoms and signs, increased well-being, etc., defer reinoculation three days, or until the first symptoms of retrogression in general condition or physical signs occur. Maintain the dosage or increase it every two or three days until the patient entirely well. Generally about three doses are necessary. Average mortality with vaccine treatment only 5 to 10 per cent. Convalescence shortened and danger of complications lessened. In severe cases also give 20 to 30 grains of sodium citrate every two or three hours. *Craig.* 238

Epinephrin, 8 minims (0.5 c.c.) of 1:1000 solution in 1 pint (500 c.c.) of saline solution subcutaneously, caused prompt improvement in a desperate case. *Lonhard.* 281

Poliomyelitis, Acute. DIAGNOSIS. Preparalytic symptom: A peculiar, twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to somewhat less than a minute. Usually affects part or whole of one or more limbs, face, or jaw, but sometimes whole body. Duration of spells short at first. Often accompanied by a cry similar to hydrocephalic, or by brief period of unconsciousness. *Colliver.* 177

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Low nitrogen diet found to have very favorable influence upon psoriasis eruption, especially when extensive. Severe cases improve under such a diet almost to the point of disappearance of the eruption. *Schamberg, Kolmer, Ringer, and Raiziss.* 178

Application of picric acid solution brings immediate and constant relief from itching. *Wilcox.* 176

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will

have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* Page 53

Puerperal Sepsis. TREATMENT. Fixation abscess recommended in this and other severe infectious states, including pneumonia, appendicitis, typhoid fever, etc., whenever condition seems to be taking a turn for the worse. Inject 2 c.c. of pure oil of turpentine under gluteal skin. When abscess forms, evacuate through small incision (do not drain) and apply Bier cups twice daily. Excellent results in 18 cases. *De Lostalot.* 168

Pyloric Spasm. TREATMENT. Atropine in a certain proportion of cases brings relief. The author found that epinephrin hypodermically procures complete and lasting relief in most instances. In 2 cases the palpable pyloric tumor could be felt to melt away under its influence. Prolonged gastric lavage, using water at 105° F., also has a happy effect in relieving spasmodic stomach conditions. *Stockton.* 367

Pyorrhea Alveolaris. TREATMENT. Sensitized vaccine against streptococcus, staphylococcus, pneumococcus, and bacillus of Friedländer used in a number of cases. After 2 injections, mechanical and dental treatment added. After 4 or 5 injections, teeth clean and firm, and organisms gone. Three or four supplementary injections given. No recurrence in six months. *Bertrand and Valadier.* 304

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disappeared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* 55

Rachitis. TREATMENT. Pituitary extract given to 16 young children with rickets, and effects compared with controls. After a few weeks of pituitary, the children were able to stand and began to walk; fontanelles began to close and growth of teeth was considerably accelerated. Osseous tenderness gradually diminished, weight was gained, and musculature became firmer. *Weiss.* 218

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intramuscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* 91

Ringworm. TREATMENT. Body ringworm more easily controlled by painting on picric acid solution than by usual antiseptic ointment. *Wilcox.* 176

Scarlet Fever. TREATMENT. Iodine ointment used locally in 19 cases (see Diphtheria). These cases were unusually free from local complications. *Thomas.* 364

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Skin-grafting. Following method of dressing skin-grafts just after their application described: Strips of gauze, 6 to 8 layers in thickness, are thoroughly impregnated and buttered with sterile 33⅓ per cent. bismuth paste (Beck's paste). These are laid over the grafts smoothly for 2 or more inches beyond the wound. No wrinkles or folds should remain. Over these is placed a layer of absorbent cotton, and the whole held firmly by a roller bandage. The first dressing should be done on the fifth day, great care being exercised in the removal of the primary dressing. A similar dressing is reapplied and subsequent dressings done every third or fourth day as required. At about the fifth dressing one can peel from each graft a thin film of dead cuticle, leaving a firm, pink, healthy graft in position. *Coerr.* 358

Spasmophilia in Children. TREATMENT. Combined treatment with phosphorized cod-liver oil and milk curds from which the whey had been removed by washing with water (thus removing all mineral salts) was employed in 12 cases. A cure was obtained in 9 cases within a week, twice at the end of the second, and once in the fourth week. There was loss of weight, but this was soon made up on return to full milk diet. *Bernheim-Karrer.* 368

Syphilis. DIAGNOSIS. Luetin test valuable as diagnostic measure in tertiary and latent stages of syphilis, indicating a state of hypersensitiveness to spirochetal proteins induced by a period of cessation of introduction of these proteins previous to the test. Provocative injection of salvarsan, followed by both Wassermann and luetin tests, suggested to ascertain whether treatment has been curative in a given case. *Foster.* 179

TREATMENT. Epinephrin, 15 to 20 drops of 1:1000 solution in a little water by mouth, advised ten to fifteen minutes before injection of neosalvarsan, to prevent "nitritoid" symptoms, arising in some patients from the latter, *e.g.,* facial congestion, tingling in throat, nausea, and vomiting. *Galliot.* 212

Tonsillitis, Ulcerative. TREATMENT. After thoroughly washing surfaces and crypts, apply 10 per cent. silver nitrate solution over ulcerated surface and carry down into crypts as well. Then dust thymol iodide with powder blower over gland and throw it into diseased lacunæ. Where

tonsils seat of recurring inflammation, but patient objects to removal, use electric cautery. Selecting 3 or 4 crypts at a time, apply 10 per cent. cocaine solution to interior of each with fine-pointed cotton applicator. When anesthesia sufficient, introduce curved electrode into each crypt and turn on sufficient current to produce a white heat before electrode removed. Patients thus treated are freed from further attacks. *Bishop.* Page 241

Tracheobronchial Glandular Enlargement. DIAGNOSIS. Percussion of thoracic vertebræ, especially those above level of inferior scapular angles, affords tonal changes of clinical value in this condition; these must always be correlated, however, with mural signs in the individual case. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect vertebral percussion sound less, and oftener produce dullness than hyperresonance. *Da Costa, Jr.* 180

Tuberculosis, Articular. TREATMENT. X-rays found useful in bone and joint tuberculosis. Aluminum or thick leather shield to be used. Treatment not to be employed in children less than 5 years old, and in older children epiphyses should preferably be avoided. Best effects noted in cases with sinuses and secondary infection. Part exposed from all sides to an erythema-producing dose; three weeks then allowed to elapse before repetition. Joints healing under the rays show but little limitation of motion. Abscesses with skin about to yield should not be rayed, owing to danger of necrosis. *V. Schede.* 165

Tuberculosis, Laryngeal. TREATMENT. Scarlet red, 10 per cent. in a mixture of equal parts of sesame oil and petrolatum, applied twice daily in cases with laryngeal lesions, whether ulcerative or not. No unpleasant results. Prompt relief of pain in every case, tendency of ulcerations to heal, hoarseness improved, and, where only infiltrations and edema, swelling markedly less after a few weeks. *Hinman.* 306

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex à long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

The X-rays will demonstrate much more accurately the extent of involvement than any other diagnostic agent. In determining the operability of a surgical condition in a patient suffering also with pulmonary tuberculosis, or in giving a prognosis in a known case of pulmonary tuberculosis, radiographic examination is essential. *Moore.* 367

TREATMENT. Frequency of gastric atony and dilatation, with resulting digestive symptoms and secondary toxic manifestations (aches and pains in chest and right hypochondrium, morning depression, insomnia, hepatic weight, vertigo, chilliness an hour after meals, fleeting edema, etc.), in pulmonary tuberculosis pointed out. Treatment: (1) Support to stomach and abdomen by Rose belt of plaster or moleskin, followed, upon improvement, by supporting belt to be worn continuously and later in daytime only. (2) No liquids with meals or for two to two and one-half hours after. (3) Lunch to be light. (4) Recumbency, with attempt to sleep for one-half to one hour after each meal. (5) No alcohol or fresh bread. (6) Medicinal treatment: Tr. nucis vomicæ, acidi hydrochlorici dil., āā f℥ss (15 c.c.); glyceriti pepsini, f℥iss (45 c.c.); aq. menthæ pip., q. s. ad f℥iij (90 c.c.). Teaspoonful in ½ glassful of water after meals. If much flatulence, add chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until relieved. (7) Cold shower or sponge baths, with needle bath to abdomen, followed by brisk rub, each morning. (8) Where mucous passages and flatus: Turkish towels, wrung out in hot water, to be applied to abdomen for one-half hour after meals. (9) Thorough mastication of food and abstention from worrying at meals. (10) Fats to be avoided at first. *F. N. Robinson.* 95

Measures to overcome fever described: (1) Where prolonged fever drains on patient's strength, pyramidon is drug to be preferred—5 grains (0.3 Gm.) in cachet at night, or, if necessary, three times a day. In neurotics bromides sometimes efficacious. (2) Rest in recumbency to be insisted on until temperature does not rise above 99° in men or 99.2° in women, when patient may sit in chair for two hours, then recline on couch, in open air if possible. Exercise then gradually increased. (3) Where severe cough, sedative mixture tends to prevent fever from the exertion and autoinoculation. (4) Where rest and drugs fail, cautious use of tuberculin (T. R. or B. E.), beginning with only $\frac{1}{100000}$ mg., exerts antipyretic action, though often only for short periods. Tuberculin acts best in cases free from fever while at rest, but febrile when exercise taken. *Wethered.* 120

Value of auscultation at acromion process in apical tuberculosis emphasized; it amplifies all auscultatory signs over apices. Of 28 cases in first stage, all showed acromial breathing. *Magida.* 239

Guaiacol administration, beginning with 5 minims (0.3 c.c.) three times daily, increasing by 2 minims (0.12 c.c.) a week up to 12 or 15 minims (0.75 to 1 c.c.), and continuing the drug for four months or longer, yielded highly satisfactory results. The drug should

be taken immediately before food. The following formula was used: Guaiacolis, f℥j (4 c.c.); alcoholis, syrupi limonis, āā f℥j (30 c.c.); spiritus chloroformi, f℥ij (8 c.c.); aquæ, q. s. ad f℥vj (180 c.c.). One-half ounce three times daily. *Mayberry.* Page 366

Ulcer, Gastric. DIAGNOSIS. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* 114

TREATMENT. Cream diet used with success in 26 cases. One quart (4 glasses) a day yields 1800 calories. To this may be added 600 c.c. of milk or 6 slices of bread or 5 tablespoonfuls of oatmeal gruel or 3 eggs. Cream causes inhibition of gastric secretion. If not tolerated in full strength, it may be diluted with equal or greater amount of milk. Ice-cream a useful variant. Some marked cases progressed to good recovery in two or three months under cream diet. Method adapted for bed or ambulant treatment. Also useful as prophylactic against recurrence of ulcer. *Nichols.* 169

Ulcers. TREATMENT. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

Urticaria. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Vaccination. Tincture of iodine, applied to the vesicle as soon as possible after the latter has formed, and repeated two or three days later, either prevents pustule formation or so limits it that the several pustules formed do not coalesce. The vesicles soon dry up and form a small scab. In not one of 116 cases so treated was there secondary infection with pus-producing bacteria, whereas in those not so treated about 30 per cent. were secondarily infected. There is no interference with the immunizing process. The scab should be kept covered with sterile gauze for several weeks. In cases of secondary infection with pus formation best results are obtained by removing the scab and pus, painting the base with tincture of iodine, and, when dry, covering with bismuth subiodide powder. Superfluous granulation tissue should be treated with a stick of silver nitrate. *Albert and Alden.* 369

Vomiting. TREATMENT. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Vomiting of Pregnancy. TREATMENT. Apomorphine, 1/36 grain (0.0018 Gm.) in a teaspoonful of water, found effectual in a severe case; likewise in other cases of vomiting or nausea. *Field.* 182

Thyroidin in 1½-grain (0.1 Gm.) tabloids given in several cases, with complete curative effect. *Koreck.* 284

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1:1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received 1/3 c.c. as initial dose and 2/3 c.c. four days later; others, ½ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a bronchopneumonia as complication, a mixed vaccine should be used. *Davidson.* 118

Silver nitrate in 2 per cent. solution applied to throat in 95 early cases to prevent spread of infection downward from pharynx. Useful results in 84 instances. Mucus secretion prevented and coughing spells due to irritation by secretion minimized. Silver solution applied every day at first; later, and in older children throughout, on alternate days. *Ochsenius.* 182

Epinephrin, 3 minims (0.2 c.c.) of 1:1000 solution, given every four hours in case in a child 7 years old, ill six weeks. Paroxysms markedly reduced almost at once. Drug then continued 3 times a day for three weeks more. *Lord.* 280

Wounds. TREATMENT. Stream of air from ordinary electric fan or register found useful in drying and promoting healing in large wounds, obstinate leg ulcers, and discharging eczema. *Heisler.* 182

Mixture of saturated magnesium sulphate solution and glycerin in equal parts recommended for dressing infected wounds. *Freese.* 304

Following summary presented: *A. Incised wounds:* 1. Paint with iodine. 2. Shave dry. 3. Tie all bleeding points. 4. Remove foreign substances. 5. Suture all tendons and nerves. 6. Again apply iodine in and around wound. 7. Suture wound. 8. Apply dry sterile dressing.—*B. Lacerated wounds:* 1, 2, 3, 4, 5, same as in *A.* 6. Cut away all damaged tissue. 7. Again apply iodine. 8. Suture wound.—*C. Punctured wounds:* 1, 2, same as in *A.* 3. Enlarge opening for drainage. 4. Insert rubber drain. 5. Alcohol dressing. 6. Tetanus antitoxin.—*D. Gunshot or bullet wounds:* 1, 2, same as in *A.* 3. If much bleeding, enlarge opening and tie vessels. 4. If nerve injured, suture nerve. 5. Close wound. 6. Alcohol dressing. 7. Tetanus antitoxin. *Hoag.* 307

Book Reviews

Biochemic Drug Assay Methods. By Paul S. Pittenger, Ph.G., Ph.C., Phar.D., Instructor in Pharmacodynamics, Departments of Pharmacy and Chemistry, Medico-Chirurgical College, Philadelphia; Member of the "Committee on Physiologic Testing" of the American Pharmaceutical Association, etc. Edited by F. E. Stewart, M.D., Ph.G., Professor of Materia Medica and Botany, Departments of Pharmacy and Chemistry, Medico-Chirurgical College of Philadelphia; Chairman of the Section on Materia Medica and Pharmacy of the American Medical Association, etc. Pp. 158, with 89 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1914. Cloth, $1.50.

The physiologic standardization of drugs, such as digitalis, ergot, pituitary preparations, epinephrin, and aconite, is a matter of great significance to the practitioner, for chemical assaying is not practicable with these drugs, and these are precisely the agents in his drug armamentarium that are most likely to deteriorate. As drug therapy, because of advances in clinical methods for exploration of the various functions of the human body, becomes more and more precise, there is increasing need that the physician shall have at his disposal drugs the dosage of which he can effectually and confidently regulate. Dr. Pittenger is well fitted by extensive laboratory experience for writing such a work as this. In it will be found lucidly described the various methods now recommended for the standardization of the drugs already mentioned. All details are given, and the pieces of apparatus used are illustrated, so that the book will be suited not only for those continuously engaged in drug standardization, but for perusal by students of pharmacy and medicine, who should clearly understand the aims and procedures of the standardization of these important drugs. Dr. Pittenger has had the merit to introduce the method of putting up ergot preparations in small sealed glass containers from which the air has been exhausted before closure. From the practical standpoint this is a landmark in the history of ergot little short in importance to the discovery of its active principles a few years ago by Dale and Barger, for the vacuum permits of keeping ergot with undiminished strength for a prolonged period, thus supplying the practitioner always with a drug of definite therapeutic power, where formerly often a deteriorated sample would alone have been at hand. The blood-pressure and uterine methods of standardizing ergot, as carried out by the author, as well as the cock's-comb method still used by some, are among the procedures described in the convenient little volume under review. Various tracings illustrating results actually obtained in standardizations are included.

A Manual of Infantile Paralysis, with Modern Methods of Treatment. By Henry W. Frauenthal, A.C., M.D., Surgeon and Physician-in-chief, New York Hospital for Deformities and Joint Diseases, and Jacolyn Van Vliet Manning, M.D., Epidemiologist, Wisconsin, 1908. Octavo of 374 Pages, with 128 Illustrations, Nearly All Original. Philadelphia: F. A. Davis Company, 1914.

In this volume the authors record their personal experience with acute poliomyelitis, its epidemic appearance, its symptomatology, its diagnosis, and the methods of treatment. The daily attendance of not less than 100 to 150 children at the Hospital for Deformities and Joint Diseases in New York certainly lends weight to the authors' statements and renders the book one of peculiar value. The epidemiology of the disease is first discussed, next the exciting cause (including experimental work), the predisposing causes, the pathology, the general symptomatology, that of special types of the disease, the diagnosis in the preparalytic stage, the differential diagnosis, the prognosis as to life and disability, the prophylaxis of and immunity from the disease, the treatment of the preparalytic stage and of progressive ascending or descending paralysis, hydrotherapy, electrotherapy, physical therapy, massage and passive motion, therapeutic exercises performed before a mirror, mechanotherapy, and, finally, the surgical treatment. The illustrations bear both on the distribution of the disease, experimental work in monkeys, the minute pathology, the symptomatology (including special types), the ultimate disabilities, and the technique and results of treatment. The excellent effects of treatment secured by the authors in many members of their long series of cases, the simplicity of the text, the numerous photographs, and the firm clinical basis for the statements made render this book absolutely indispensable to all those under whose care one or more cases of acute poliomyelitis may fall.

Treatment of Sexual Impotence and Other Sexual Disorders in Men and Women. By William J. Robinson, M.D. Duodecimo of 422 Pages. New York: Critic and Guide Company, 1913. Cloth, $3.00.

In this book the author deals in his customary concise and incisive style with such matters as pollutions, spermatorrhea, masturbation, and impotence. Much valuable infor-

mation, both diagnostic and therapeutic, is afforded the reader. The author's experience in this class of cases has led him to outline definite schemes of treatment and form definite opinions as to what measures, if any, are indicated under various definite circumstances. The book contains numerous illustrative case histories, with an account of the results obtained from treatment applied in each. It cannot fail to prove useful to its readers in the management of these ofttimes difficult cases.

Spätpsychosen katatoner Art. Eine klinische Studie, von Dr. med. Maurycy Urstein, Warschau. Octavo of 440 Pages. Berlin und Wien: Urban & Schwarzenberg. New York: Rebman Company, 1913. Paper-bound, 18 marks ($4.50).

As late psychoses, the author designates mental disturbances appearing after the age of 40. The present work consists of a very extensive and detailed report of 40 cases belonging to this category, together with preliminary and concluding short sections of critical text. The author has observed that patients in the period of life referred to often present certain similar clinical features, even though the disease processes themselves be essentially different. Organic cases such as those of arteriosclerotic (senile) psychosis are excluded from consideration; hysteric cases are but slightly dealt with, and among the cases of manic-depressive insanity encountered by the author only those are taken up which presented catatonic phenomena. The author divides late catatonia into two forms, the presenile and the hypochondriac-nihilistic. The book includes a critical discussion of the mental peculiarities of the menopause, the distinction between arteriosclerotic and senile dementia and between the catatonias of puberty and of late adult life, etc.

Medical Gynecology. By S. Wyllis Bandler, M.D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Third Thoroughly Revised Edition. Octavo of 790 Pages, with 150 Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.00, net; Half-morocco, $6.50, net.

The new edition of this useful and popular work shows a considerable increase in bulk over the original issue, and a part of this increase in the present volume is due to the addition of material on the internal secretions, the rôle of which in gynecology the author recognizes to be an important one. As he rightly states, a work on medical gynecology is an eminently suitable place for the discussion of this subject, and we accordingly find a chapter of not less than 55 pages devoted to it. The writings of Kermauner, J. Novak, Cushing, Biedl, and others have been drawn upon in bringing this material thoroughly up to date. The pineal, thymus, parathyroids, thyroid, hypophysis, and ovaries (in their internal secretory function) are all taken up in their relationship to gynecologic affections, and there are additional sections on what the author terms "hypergenitalism" (pubertas præcox) and "hypogenitalism" (sexual infantilism). In cases in which there is excessive thyroid activity the author recommends a combination of quinine hydrobromide, 5 grains, with dried adrenal gland, 2 grains, three times a day. The work includes a valuable section on "Associated Nervous Conditions in Gynecology." The systematic consideration of the various gynecologic affections—from the medical standpoint in particular—is, as it was in the previous editions, admirably done, and the book, in its present form, is calculated at least to maintain, if not to augment, the already notable degree of interest it has awakened in the profession.

Diagnosis in the Office and at the Bedside. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics, Materia Medica, and Diagnosis in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, etc. Seventh Edition, Thoroughly Revised. Octavo of 547 Pages, with 164 Engravings and 10 Plates. Philadelphia and New York: Lea & Febiger, 1914.

The author's avowed intention in this and the preceding editions of the work has been to consider in as practical a manner as possible the symptoms of disease as they appear in the office and at the bedside. The symptoms recognition of which leads to a diagnosis are accordingly first taken up, and their significance in pointing to definite abnormal conditions then emphasized. The successive chapters of the book are devoted, respectively, to the face and head; the hands and arms; the feet and legs; hemiplegia; speech; the skin; the tongue, mouth, pharynx, and esophagus; the thorax and its viscera; the pulse, blood-vessels, and blood-pressure; the abdomen and abdominal viscera; the bowels and feces; the urinary bladder and the urine; the eye, chills, fever, and subnormal temperatures; headache and vertigo; coma or unconsciousness; convulsions or general spasms; hiccough, vomiting, regurgitation, and the character of the vomit; cough and expectoration; pain; tendon reflexes and muscle tone. The reader is enabled, through this arrangement, rapidly to ascertain the clinical meaning of each symptom observed in a given case, and by combination of the various indications thus derived reach the diagnosis in the most direct possible manner. This work, though not containing information on laboratory diagnostic methods, undoubtedly serves well the purpose for which it is intended. The illustrations are sufficiently numerous and each plainly tells its story. The index covers the text thoroughly.

The General Field

Conducted by A. G. CRANDALL

A Perennial Pest

The process of enlightening the lay public on even the most elementary principles of hygiene is a slow and difficult one, and even the most ordinary and self-evident facts are hardly allowed to germinate in the lay mind before some effort is made to uproot them.

Recently a great deal of attention has been devoted to the exploitation of health theories by publishers of lay periodicals, and, of course, the first consideration is to provide "copy" that will attract attention and catch the eye and fancy of the reader.

For this and other reasons it has been the custom of late for notoriety seekers, in the profession and out, to publish articles designed through sensational and bizarre statements to amuse the reader, irrespective of scientific accuracy.

Where earnest and painstaking writers have endeavored to make clear to the lay public the value of a properly selected dietary, an opening is afforded for the sensationalist to come forward with a series of iconoclastic statements intended to ridicule the well-meant attempts of the great body of the medical profession.

Most of these picturesque and readable, but wholly inaccurate, contributions are estimated at about their real value by the intelligent reader, but occasionally, where the contributor is a physician, he does succeed in confusing the popular mind.

The Prize Prevaricator

It is often said that no phase of human nature will ever surprise the experienced physician, but it is probable that the judge of the divorce court is, if possible, more immune against shock.

More ingenuity seems to enter into the testimony in the divorce trial than was ever exercised by Baron Munchausen or any other writer of fiction.

It is the pleasant duty of the divorce court to sift out the few grains of real fact from the mass of conflicting testimony and exercise judgment surpassing that of Solomon in making a decision.

It is quite likely that the elaboration which is shown in framing up plausible court testimony is responsible for many a miscarriage of justice where the real, uncolored facts are disclosed. The habit of discount becomes so fixed that the truth is not recognized by the Court and the honest client suffers for the sins of others.

* * *

The World Owes Them a Living

About the time the American hobo first became generally known to literature, his creed was also explained, viz., the world owes me a living. Had any one been told that in a short cycle of years this slogan of the hobo was to be adopted by the British nation, it would have been regarded as a dream.

The dream has come true and it

promises to be a very bad dream indeed. Why should a large number of people who have a chronic disinclination for labor ever worry about the future if their future is provided for by the government?

Nearly everybody has to work about all his time in order to get a living. He has to work pretty industriously too, and if society is to burden itself with the responsibility of taking away all anxiety from the ne'er do wells it will prove a heavy load.

The diplomacy of England may have won a victory in the Panama tolls dispute. This country can well afford to take an optimistic view of such matters, however, in view of the object lesson likely to be acquired from the socialistic experiment now being tried out by Lloyd-George. The whole world is likely to profit by this venture.

* * *

The Sea Serpent

Marvelous tales have been related of the sea serpent. One of his favorite tricks is to bite off the cork leg of some sailor returning from shore leave heavily freighted with samples taken from bottles bearing various labels.

Occasionally fishermen off the Jersey Coast who have prepared themselves with applejack to endure the strenuous labors of their calling have seen the sea serpent at a distance, but no serious accident has occurred in recent years.

It might be easily conjectured that physicians in attendance at the American Medical Association Meeting at Atlantic City, and sojourning at that attractive resort for some days, as they often do, might themselves get a glimpse of the sea serpent. But although the 1914 meeting was held under climatic conditions which are said greatly to favor the activities of the sea serpent, no instance of his appearance in the "offing" has come to hand.

* * *

Where the Doctor Needs Good Judgment

There are numerous occasions in modern finance where reluctant witnesses seek to evade the giving of testimony on the plea of illness. Under such circumstances the doctor usually casts the deciding vote as to whether or not the witness shall appear in court.

It is quite likely that in almost any such instance the statement by the family physician that in his judgment the reluctant patient could safely give testimony would be equivalent to a change of physicians in that family in the near future. Nevertheless, the physician should avoid any appearance of connivance with the patient under such circumstances.

The willingness of medical experts to take sides in court cases has already reached the proportions of reflection upon the integrity of the so-called specialist, and the reputation of the profession in general should not be made to suffer in public esteem through complacency on the part of the medical adviser of some financial magnate who fears, for abundant reason, to make explanation in court.

* * *

Unappreciated Philanthropy

The Erie Railroad has been ordered by the Public Service Commission of New Jersey to wash their car windows. They had refused to do it.

Through an evident misunderstanding of their motive, this unwillingness was construed as an exaggerated form of economy.

It has been stated by good medical authorities that the tropical glare of sunlight is productive of neurasthenia. The New York commuters, owing to the strenuous life they lead, are peculiarly susceptible to this form of ailment. When a philanthropic railroad wished to save them from the glare of light incident to early summer they did not appreciate it.

Hardly anybody appreciates the railroads these days and the railroads feel deeply about it. An ungrateful public will not buy railroad stocks at anywhere near the price they were formerly sold for, and in many instances are even reluctant to load up with their bonds.

* * *

More Feminism

Affairs are in a fearful state in New York City. As is well known to outsiders who occasionally travel by New York street cars, a large proportion of the inhabitants of that city, through natural reluctance to stay in their homes, spend a good deal of their time traveling to and fro by subway, elevated, and surface cars.

Occasionally some elderly male citizen absent-mindedly arises and gives his seat to a woman, whereupon he is sure to be deeply grieved at the lack of appreciation manifested by the recipient of the favor. If the gentleman of the old school is of literary turn, he writes to a daily newspaper and complains of this ingratitude.

A New Yorker who has given deep thought to the subject has concluded that this lack of politeness of New York's feminine population is merely a manifestation of the feminist spirit. Why should any one express appreciation when they receive what belongs to them in the first place? Of course, such instances of unappreciated politeness like the foregoing are not very numerous, as a few experimental trips on the New York street cars will prove conclusively.

* * *

A Rude Shock

An enterprising young Englishman coming to this country as manager in a highly specialized line of business made the acquaintance of a maiden some ten years his senior and indulgently allowed her to issue formal notices of an engagement. And now, having changed his mind, this genial gentleman has been haled into court and made to give bond for his appearance in a breach of promise suit. He says it is a pretty kind of country where a man can't change his mind about marrying some woman without having the law get after him.

No doubt, it must have been quite annoying to come in such rude contact with the customs of another country, but the victim of so strange a custom is probably safer with the fair sex of the United States than he would be with a considerable portion of the feminine population of his native country.

It is time that mere man began to realize that those of the feminine persuasion are not to be trifled with.

* * *

Spanking

A certain mother's club in Pennsylvania recently held a symposium on proper methods of applying that correction which seems to be essential to

the proper upbringing of young America, and in the mutual confessions 33 out of 34 mothers present admitted that occasionally it became necessary to apply corporeal punishment.

This will be a shock to the feelings of a large number of unmarried theorists in the management of husbands and the upbringing of children.

The probabilities are that most of the mothers who went on record on this occasion entered upon family life with very strong prejudices as to the brutality of corporeal correction of children. Having given their theories a thorough test, they found them impractical and fell back upon the only absolutely sure method of inspiring respect.

There can be no normal physical developments among children without the right mental attitude, an attitude based upon the knowledge that wrongdoing brings its inevitable punishment. The experiences of the 33 mothers above referred to might well be published as a pamphlet for wide distribution.

* * *

The English Coal Miner

More than a million men and boys are reported by the London Lancet to be engaged in coal mining in Great Britain. As at the present time the law forbids women working underground, only about 6500 females are now employed, chiefly in preparing the various grades of coal for the market.

Although coal mining is of long standing as an industry, it remains one of the most hazardous forms of employment.

The temperature of the English mines is said to average a rise of about 1° F. to every 72 feet of depth. It is apparent that there are variations to this rule, however, as there is one mine in Lancashire which has reached a depth of nearly 4000 feet.

Accidents naturally constitute a great factor in mortality of miners, but it is gratifying to learn that such accidents have diminished 25 per cent. during the last ten years.

Employment in the mines seems to be followed by a large train of nervous disorders which are generally regarded to have been superinduced by trauma. While coal miners are said to suffer to a large extent from diseases of the lungs, it seems that the death rate from pulmonary tuberculosis is abnormally low. One phase of this report which cannot fail to make its appeal to those humanely disposed is that, by comparison with those engaged in other occupations, the miner is characteristically serious and his "facial expression indicates mental sadness." Thus does the undemonstrative English investigator characterize it.

The miner has never been overpaid. Unfortunately he has often alienated from himself well-deserved sympathy by his failure in a crisis to refrain from violence and disorder, a method which has seldom proved effective in establishing needed reforms.

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Department on the Internal Secretions

Original Articles and Summaries of Selected Articles

EXOPHTHALMIC GOITER: ITS PATHOGENY AND TREATMENT.

By F. GRAHAM CROOKSHANK, M.D. Lond., M.R.C.P.,
Physician to the Northwestern Hospital; Assistant Physician to the Belgrave Hospital for Children, and to the Mildmay Hospital,
LONDON, ENGLAND.

THIS disorder was first described by Parry, of Bath; although, since the later writings of Graves and of von Basedow have everywhere been accorded the greater recognition, it is with their names rather than with his that the affection is associated.

Ever since, in the early nineties, attention first became directed toward the striking fact that many of the symptoms of exophthalmic goiter stand in striking antipathy to those of a person whose thyroid gland has been removed by art or rendered useless by disease, the notion has widely prevailed that the disorder is primarily due to an affection of that organ.

And moreover, since so many of the symptoms are such as may be produced by overdosage with thyroid substance, and since also actual examination of the gland pretty constantly reveals such hyperplasia as is thought to indicate increased functional activity, it has come to be accepted by most, if not by all, that the nature of the trouble is one of functional excess, associated with increased capacity for secretion. The further suggestion that this excess, or increase, is primary, idiopathic, or essential has particularly commended itself to those thoroughly British pathologists who love to speak of disease as a morbid entity, something precipitated suddenly and completely, like a baby in a gooseberry-bush, "out of the everywhere into here."

Belief in the primarily thyroidal nature of exophthalmic goiter has, moreover, this recommendation to the otiose, that it shelves inquiry as to why or

how the thyroid should suddenly depart from the primrose path of physiologic righteousness, and disposes summarily of inconvenient clinicians who have thought to establish causal relations, not easily explained, between the disease and various antecedent conditions and circumstances.

But no state, either physical or metaphysical, is ever primary or idiopathic, unless, indeed, we persuade ourselves that, by the use of these words, we are merely admitting and not seeking to conceal our ignorance of the necessary chains of causation. It is obvious that, were exophthalmic goiter really nothing but the clinical expression of an idiopathic hyperplasia of particular nature, there would clearly be but one rational method of treatment: to trim the gland to proper proportions. But, since there is reason to believe that the activity and overgrowth are either the result of wanton provocation by some vicious agency, or of the nature of a purposive, albeit indiscreet response to some urgent call for the fulfillment of duty,—carried too far, as so often are well-intentioned efforts,—it is plainly our duty to seek out and remove the incitement, in the hope that restoration to a state of quiet efficiency will ensue. Clearly, too, the actual removal of glandular tissue is not rational unless the tendency to hyperplasia and functional excess has acquired such impetus that its progress cannot be stayed or its effects otherwise combated.

We must not, then, without full conviction, assent to investigations that are arrested at the thyroid gland itself; or to the claim that thyroidectomy affords the only rational and effective plan of treatment, and should therefore be resorted to at the earliest opportunity.

It is sometimes suggested that belief in an essentially thyroidal pathogeny, and a settled conviction in favor of surgical intervention, are justified by a study of those cases which, on the continent of Europe, are spoken of as instances of primary Basedow's disease. But, if we press for a definition of these cases, we are told, in approved fashion, that they are those due to primary hyperplasia, and for which surgical intervention is to be recommended.

Even so are archdeacons said to be high ecclesiastic personages who perform archidiaconal functions.

Moreover, we cannot refuse to include within the ambit of our purview those many cases of which the signs and symptoms, if referred to the classical standards of the textbooks, are found to be anomalous, or incomplete, as well as sometimes transient.

It does not advance our knowledge, or clarify our thought, to speak contemptuously of such as *formes frustes*—unworthy instances of what disease should be. Rather should they be investigated on their merits, as likely to afford us hints on the pathogeny and treatment of the more serious and progressive cases to which alone some would attach the label of true "exophthalmic goiter."

Indeed, it cannot be said that, after all, everyone is prepared to admit the preponderating influence of the thyroid gland in even these latter cases. For some believe that certain of the symptoms, if not sometimes all the symptoms, may be of nervous origin; while others, admitting the great part

played by the thyroid, see evidences of depraved rather than of excessive function,—of dysthyreosis, that is, rather than of hyperthyreosis,—while others, again, think that the thyroid is only one of the organs principally at fault.

It therefore becomes necessary to discuss, albeit with the scantiest justice, what we think we know concerning the functions of the thyroid gland, before attempting to allot its responsibility, or to reconcile conflicting views in respect of the pathogeny of the various groups of cases that come before us.

We speak of the thyroid gland as endocrinic, yet of the actual nature of its secretion little is really known. It is generally believed, however, that a substance of peculiar albuminoid construction is elaborated; that this is sometimes stored as colloid, but normally, after activation by the iodine brought to it by the blood, passes into the general circulation in a form spoken of as iodothyrin. It is to this iodothyrin that the various pharmaceutic preparations of the gland owe their practical efficacy.

But whether or no this iodothyrin presents the only secretion of the gland is not yet settled, for while some believe that there are at least two internal secretions, thus resolving many puzzling difficulties, others are convinced that there is but one secretion, acting differently on different structures, or perhaps under different circumstances.

However, the functions of the thyroid gland are usually spoken of as concerned with certain nervous mechanisms, with the work of other ductless glands, with processes of metabolism, both destructive and constructive, and with the organization of defense against parasites and poisons.

It may be said that thyroid substance, by virtue of the iodothyrin it contains, exerts a stimulating influence on all parts of the nervous system, but particularly on that part spoken of as vegetative, and to use the terms of the Viennese, upon both its autonomic and sympathetic components, although upon the latter preponderatingly.

That there is interplay with other endocrinic glands cannot for one moment be doubted, and so far as our present knowledge goes, the thyroid, the chromaffin system, and the infundibulum are ranged together in mutual support, and in opposition to the pancreas and parathyroids, though certainly the good fame of the latter structures has been somewhat blown upon of late.

But there is also close association with the activities of the sexual organs, of women, at any rate, and there are some indications of antagonism, at some periods of life at least, in respect of the thymus.

It should not be forgotten, too, that if the pineal gland seems to restrain the ripening of the male gonads, it cannot be denied that without the kindly influence of the thyroid they ripen even more tardily.

The metabolic functions of the thyroid are indeed obscure. On the one hand, the task of the healthy organ seems mainly destructive, quickening the disintegration of protein matter and hindering the accumulation of fat. On the other, its business seems essentially constructive, for skeletal growth is stimulated, calcium is rapidly assimilated, even if afterward hurried away,

and, as Biedl insists, the destructive effect on carbohydrates of the internal secretion of the pancreas is restrained.

But we do not know whether these tasks in respect of other ductless glands and metabolism are performed directly or through nervous agencies. If directly, surely there must be more than one hormonic substance; if indirectly and through nerve, we may assume the notion of a single polyvalent hormone, capable of eliciting opposed effects according to the particular nervous apparatus that in different circumstances is selected.

That the thyroid gland opposes or destroys not only some of the waste of normal metabolism, but certain abnormal endogenous poisons, as well as micro-organisms and their toxins, is generally believed, but it is still debated, with some degree of acerbity, between the followers of Blum and those who disagree with him, whether this function is discharged in the blood by the products of secretion or in the tissues of the gland itself.

On the whole, it is perhaps most likely that the purely defensive and destructive functions of the thyroid appertain to the organ itself and not to the internal secretion, so that we may look upon the gland as, incidentally, a kind of trap or catchpit in which obnoxious material is destroyed and its elements converted to good purposes. Even so are products of waste and of disintegration converted by the cells of the liver into what Glisson called "bile: that variously beneficial balsam of the body."

It is on the whole now generally agreed that, though sometimes the case may be otherwise, as a rule the symptoms of Graves's disease are produced by the action on various tissues and mechanisms of a substance, or substances, elaborated by the thyroid, and differing from those normally produced mainly in terms of quantity.

But the question must be put: Is the thyroid in Graves's disease, when this is the case, always or ever the first organ in the body to display such aberration of function as is really a part and not merely a cause of the disease?

We must certainly agree that in certain cases of syringomyelia, etc., even though rarely, signs of Graves's disease—principally vasomotor and ocular—may arise as a result of central disturbance of the nervous system. But then such cases are not recognized as examples of the disease we are discussing.

On the other hand, exophthalmos, vasomotor disturbance, and other indicia do occur in cases of direct mechanical interference with the cervical sympathetic by tumors, without primary derangement of the thyroidal functions. And, more strange still, such results may follow the pressure on the cervical sympathetic of a goitrous enlargement of the thyroid itself.

The observation of such cases does, indeed, make it hard to deny that a primary derangement of the sympathetic, set up, as some maintain may be the case, by shock, by fright, or by long-continued emotional stress, will sometimes give us the clinical picture of true exophthalmic goiter. For the work of Victor Cyon and others has made it clear that stimulation of the

sympathetic may bring about increased vascularity, active congestion, and, indeed, even secretory hyperplasia of the thyroid itself.

It is at least likely that some of Kocher's cases of vascular Basedow's disease are really of this nature; and we may agree to find in sympathetic derangement, sometimes, at all events, if not the ultimate causative factor in the production of the disease, at any rate an occurrence that, in the pathogenic sequence, is antecedent, rather than consequent, or even concomitant to the thyroidal disorder and hyperplasia.

In another group of cases—barbarously spoken of as that of the "Basedowifying goiters"—the presence of what McCarty would call a retained thyroid unit of fetal type appears to induce overactivity and hyperplasia of so much of the thyroid as is supposedly normal in character, with the production of a Basedowian syndrome.

It is easy to suppose that, in these cases, the secretory hyperplasia stands for an attempt at adjustment, but some think it is rather the result of irritation. Still, sometimes the healthy part of the thyroid does appear to vicariously assume the duties abnegated by other portions; and there are the parallel instances in which *formes frustes* arise when the ovaries are in default, at puberty or the menopause, in some cases of pituitary deficiency, and perhaps in some cases of hypoadrenalism. Indeed, so often do symptoms of Graves's disease arise when there is disturbance of the pluriglandular balance that we have fair justification for defining another class of case in which there is *prethyroidal* disturbance of function,—but this time endocrinic rather than nervous,—and sometimes some of the symptoms are due to such disturbance.

But, beside these instances of prethyroidal derangement of nervous and endocrinic structures, we have to reckon, in the pathogeny of exophthalmic goiter, with metabolic perversions or irregularities and with certain infections and intoxications of extrinsic origin, not so much as integral parts, but as provoking agents of the disease. The clinical relationship, on which Mr. Farrant has insisted, between cirrhosis of the liver and exophthalmic goiter exemplifies the first statement, as does also the part played, according to Chalmers Watson, by certain foods in altering the condition of the thyroid, and some obscure, but nevertheless fairly definite, relation between irregularities in calcium metabolism and the disease. Nor is Sir Arbuthnot Lane without grounds for asserting that chronic intestinal stasis is one of the important antecedents; and there are other possibilities. But, in quite a large number of cases, Graves's disease appears to follow certain forms of infection and exogenous intoxication, local or general, grave or minimal, acute or chronic. Among these must be noted the specific fevers, some forms of tuberculosis—much insisted on by the French—and some quasi- as well as genuinely rheumatic affections. It is interesting to note that Parry's first case was that of a woman who, shortly before the onset of her disorder, had suffered from what we should now recognize as acute rheumatoid arthritis; and equally so, to remember that it was Kent Spender, another physician of

Bath, who first drew attention to the tachycardia and pigmentation so frequently seen among invalids at that famous resort.

Yet Spender did not recognize that he was but observing the frequent occurrence of *formes frustes* of Graves's disease, about the time of the menopause, in women who are the subjects of chronic infective arthritis, due to pyorrhea, to pelvic disorders, or whatnot. All these facts have received added interest from the work of Farrant, who has shown that certain infections do, under certain circumstances, indeed set up hyperplasia of precisely the nature found in exophthalmic goiter.

So far, then, as the ground has been traversed, we have found that, if the normal thyroid exercises function in respect of nervous mechanisms, the endocrinic balance, metabolism and defense, and if also the signs and symptoms of the disease may be due to aberration or excess in respect of the first three of these, so have we grounds for believing that nervous derangement, disturbance of endocrinic balance, metabolic perversity and infection or exogenous intoxication may each and all be clinical antecedents of the disease. To say, then, that the hyperplasia and functional perversion of the thyroid in Graves's disease is often due to definite call on the energies of the organ in respect of one or more of its accustomed activities, or at least to provocation through one of the accustomed channels, seems almost unnecessary.

But is hyperthyroidism always thus produced? and why does what should be an orderly adjustment so often pass into a progressive disorder?

The first question can hardly be definitely answered save by an appeal to the *a priori* improbability of all allegations of primary or idiopathic disease, and by the investigation of individual cases.

The second question is less difficult of resolution. Certain experimental findings are obviously relevant: The first that, as Halstead has shown, an excess of iodothyrin in the blood leads to thyroidal hyperplasia; the second, that such excess stimulates the cervical sympathetic; and the third, already mentioned, that stimulation of the cervical sympathetic in its turn leads to increased vascularity and secretory activity of the thyroid.

It is fairly obvious, then, that in many cases of progressive nature one may have to deal with the establishment of a vicious circle, initiated in one of the ways that have been stated, continued by the excess of iodothyrin poured out, and completed by the action, on the thyroid itself, of the nervous and endocrinic structures thereafter involved.

But why are only *some* cases progressive or typical, as is said?

We may well believe that sometimes provocation ceases, that at others there is a favorable readjustment of the endocrinic balance, that the circumstances of the patient's life may be ameliorated, and that, though to a surgeon this may appear an extreme hypothesis, even the physician's remedies may sometimes prove of some service.

But when, on the other hand, the disease progresses in spite of every care and favoring circumstance, what are the factors that favor the closure of the vicious circle?

Two lines of thought opened up by recent work may perhaps help us in this respect.

It will be remembered that Eppinger and his coadjutors have shown good grounds for believing that while in health the due balance of function, in respect of the mechanisms controlled by the vegetative nervous system, is procured by orderly opposition between its autonomous and sympathetic components, yet, in states of ill health, there may prevail either what is called vagotonus or sympatheticotonus.

Moreover, when vagotonus, or when sympatheticotonus obtains, there is increased susceptibility to the action of vagotonic or of sympatheticotonic drugs.

Thyroid substance contains sympatheticotonic ingredients, and when sympatheticotonism is pronounced the effect of its administration is exalted.

But there is also reason to believe that these apposed types of nervous balance represent not merely states set up in disease, but kinds of constitution or of diathesis.

At any rate it is obvious that if experiment is to be trusted a state of hyperthyroidism is more easily to be induced, and will sooner become vicious and progressive in one who is markedly sympatheticotonic than in one who is not. (As a matter of fact, the case is perhaps less simple, for Eppinger believes that some of the signs of Graves's disease are due to autonomic irritation. But the point remains that "hyperthyroidism" is more readily produced and continued in those who are the subject of a certain type of nervous balance than in others.)

The second line of thought to which I have referred leads from the little-appreciated fact that in most, if not all, cases of exophthalmic goiter submitted to examination the thymus is found to be persistent or enlarged. It is probable, certainly, that there is normally some physiologic antagonism between the thymus and the thyroid, at any rate at certain times of life; but that at other times and in other respects they may be complementary. It is, therefore, difficult fully to elucidate the connection between a persistent thymus and Graves's disease, but of the fact and its importance there is no question. It is true that in it some see the functional resurrection of a defunct organ to balance the vagaries of another. But others, since so many persons dying of exophthalmic goiter present signs of *status thymicolymphaticus,* think that exophthalmic goiter is more prone to arise, given adequate occasion, in persons who are the subjects of persistent thymus than in those who are not—perhaps because the vicious circle may close with greater readiness when there is a certain type of endocrinic balance of developmental origin.

Indeed, the subjects of exophthalmic goiter are often those who display unusual physiologic and morphologic features, and some of the peculiarities sometimes noted in the skin and appendages as signs of the disease are really indications of underlying imperfections in orthogenesis, and it is possible that there is a special correlation between types of nervous and endocrinic balance.

In brief summary of what has been said, let me suggest that the thyroidal functions are complex, and the secretion polyvalent; that the hyperthyroidism of Graves's disease may be provoked by agencies as various as are the functions of the organ; and that progression in a vicious circle happens most readily to those who by constitution, or by acquisition, possess a particular type of nervous or of endocrinic balance.

If anyone is still determined to maintain the primary or essential thyroidal origin of the disease, he should at least be prepared to say in what sense he uses language. I believe that the secret of those cases that cannot fairly be ascribed to the operation of everyday factors will ultimately be found hidden in those imperfect processes of development that are responsible for so much that is misunderstood in the pathogeny of disease.

How far do these considerations assist us in developing any rational basis for the treatment of the affection?

It is, in the first place, surely obvious that the arbitrary division we find consecrated in the textbooks, of treatment into medical and surgical categories, is both irrational and unsatisfactory, since the necessity for close co-operation, from the very first, between surgeon and physician is indeed imperative.

It is true that some surgeons, knowing the definitive, and often successful, results that attend their intervention, seem sometimes inclined to suggest that there is no medical treatment, and I admit that they are not without justification in ridiculing the jejune and often fatuous recommendations that are sometimes made in medical writings.

But, though the art of medicine may be, as compared with that of surgery, "a thing o' naught," I submit that the conventional prescription of a diet at once bland and nutritious, agreeable society, and a change to the seaside do not exhaust the resources of the modern physician. As Musser wrote in a valuable paper, published posthumously in the *American Journal of the Medical Sciences* for June, 1912, the surgeon is apt to do too much and the physician too little in the treatment of exophthalmic goiter. Experience shows us that, unless a vicious circle has been established, good results follow the discovery and removal of continuing causes for excessive activity of the gland, and reason tells us that whether or no any such continuing cause—nervous, metabolic, endocrinic, or infective—can be found, we must seek to oppose the ill effects in the system of an excess of iodothyrin, and at the same time to check its further secretion.

Here is work enough for the physician, although often indeed these indications cannot be fulfilled without surgical aid. Two special cases may be mentioned: the first when a simple goiter sets up irritation of the sympathetic; the second when a goitrous nucleus stimulates the rest of the organ.

Other opportunities for surgical assistance are not few; colonic stasis may be the peccant participant, and, in the view of some recent writers, the removal of the thymus should be early planned. But, speaking generally, the modification of nervous balances, of metabolic and of endocrinic irregularities, falls to the lot of the physician, who cannot be denied some share, too, in the treatment by vaccines or otherwise of infections and intoxications.

It has long been attempted to oppose the effects, or some of the effects, of thyroid secretion in the blood by giving digitalis, a drug which in this connection has little save custom and prejudice to commend it. The giving of belladonna is hardly rational, and such good as it may do perhaps results from its inhibition of secretion. But in *physostigma* we have a drug that in my experience controls tachycardia better than any other, and that appears generally to benefit the patient. *Arsenic,* too, is in some way or other of benefit likewise, and so is *potassium iodide.* It is true that the administration of iodine has been adversely canvassed, but Kocher gives the potassium salt, and we may have some respect for his experience. Sir John Barr lauds the use of *calcium* salts with that robustness that characterizes all his speech, and perhaps they are not without their uses and helpful in some degree.

Sodium phosphate is certainly of distinct, even if of inexplicable, usefulness, and both *salicylates* and *hexamethylenamine* often prove of service for obvious reasons.

The various sera, rodagen, and the like are generally unsatisfactory, though the *serum of Möbius* is said to sometimes give good results.

So far as glandular therapy is concerned, the administration of thyroid substance, on the plea of giving a tired organ a rest, is not to be commended, but mixed cases or cases in which myxedema is imminent may perhaps be in measure advantaged.

Parathyroid substance is far less useful than once was hoped would be the case, and *ovarian substance* is unreliable. Occasionally, as at the menopause, I have known it to help.

There are not wanting, too, symptomatic indications in certain cases for the use of *pituitary* and *adrenal substance*—perhaps the latter more frequently. But by far the most interesting clinical problem is that which attends the remarkable results of the administration of *thymus substance,* especially in slighter cases of the nervous type. That this substance sometimes brings about amelioration was first made known ten or twelve years ago, I think, by Mr. Owen, who found that a certain patient to whom by a happy accident thymus instead of thyroid had been given promptly recovered. Reports are constantly occurring in various Continental papers of its value. Personally, I have given it in almost every case that I have seen during the last three years and am convinced of its utility.

At the first blush it may seem inconsistent with what has been already said concerning the rôle of the thymus in exophthalmic goiter, that the dried gland should be advised as a remedy. But the thymus is a "queer" organ; it has different functions and perhaps different functional epochs; we do not know what may be its functional state in Graves's disease, and after all we give, not the thymus of an afflicted patient, but that of a castrated sheep. Anyhow, the plain fact remains that 20, 30, or more grains a day will sometimes abolish exophthalmos and relieve tachycardia and other symptoms.

To arrest hyperplasia we may choose various agencies. Personally, I have found the inunction of the *ointment of red iodide of mercury*—a method

I learned in India twenty years ago, and that Dr. George Murray constantly employs—of undeniable advantage. But it is sometimes painful if carelessly used.

In India the neck of the patient is exposed to the direct rays of the sun, and though this is hardly practicable in England, I have often wondered if any modification of the Finsen light could be of service. The good results sometimes obtained with the X-rays give us hope that the resources of physicotherapy are not yet exhausted. But if all such plans fail—should time as an ally have proved faithless, or should opportunity have been squandered—the cutting of the vicious circle by the surgeon's knife must not be delayed. Generally speaking, the removal of so much of the thyroid as may be judged redundant is the operation of choice. But Jonnesco still prefers to operate in certain cases upon the cervical sympathetic, and thymectomy, either with or without thyroidectomy, is now being advocated. On the other hand, there are those who see in a persistent thymus a contra-indication to thyroidectomy.

I shall not discuss these points, but content myself with insisting on the real difficulty in choosing the moment as well as the nature of the operation. The physician must not regard operation as a *dernier ressort,* nor should the surgeon deem it the only rational method of dealing with the disease.

If there be few cases that do not call, at some time or another, for surgical counsel of action, there are also few remitted to the surgeon that do not stand in need of medical treatment before and after operation.

If, as I said at the beginning, the pathology of the disease has long been a battleground for the scientific inquirer, the treatment of it should be, for the physician and the surgeon, a field of alliance: even if not worthy of the name of the "Field of the Cloth of Gold!"

PILARY DISSOCIATIONS AND INSTABILITY THE RESULT OF ENDOCRINE-GLAND DYSFUNCTION.*

By DR. LÉOPOLD-LÉVI,

PARIS, FRANCE.

By pilary dissociation is meant a lack of correspondence between the condition of the scalp hair and that of the hair covering the body. The term pilary instability is applied more precisely to cases in which, while one of these pilary systems is subnormally developed, the other is exaggerated.

A. Male Sex.—I. A first form of pilary disturbance is the result of *testicular insufficiency.* The pilary development is of an infantile type and may be termed the *female* type. The subjects, 17 to 20 years old, exhibit, on the one hand, complete absence or paucity of the hair on the trunk, pubis, and

* Summary of article in the Bulletins et Mémoires de la Société médicale des Hôpitaux de Paris, January 1, 1914.

face. The scalp hair, on the other hand, is excessive and overabundant. The parents may have noticed that, during childhood, the hair grew faster, was "thicker," and required cutting oftener than in other male children. This lack of correspondence between the two pilary systems sometimes persists after puberty. In 1 case under the author's observation, that of an infantile patient of 34 years, who was brought to him by the father because of asthma, the face was devoid of hair, while the head exhibited "a forest of hair." In another patient, 27 years of age and suffering from the adiposogenital syndrome, pituitary medication, to which testicular opotherapy was later added, brought forth a growth of hair on the chin and body.

Pilary dissociation, *i.e.*, scantiness of body hair with conservation of scalp hair, is well known to exist in eunuchs. Sabouraud, referring to the eunuchs of Abdul Hamid's harem, states that among 147 castrated subjects there was not a single instance of true baldness, though one subject had general alopecia. In the testicular insufficiency of senility the excellent condition of the scalp hair, coupled with rarefaction of the pubic hair, is at times striking. Sabouraud refers to cases in which after patients had been bald thirty or more years a thin hairy growth appeared at the vertex after the age of 60 years had been reached.

II. As a counterpart to the pilary condition typical of testicular insufficiency may be considered that characteristic of hyperorchidism, which the author designates as the *virile pilary type*. Here there is baldness, but a well-developed beard and mustache, and at times hirsuties of the body. Sabouraud recently pointed out that it is upon the completion of sexual development, at the age of 18 to 22 years, that baldness becomes manifest. At this period the facial and pubic hair also develops.

B. Female Sex.—I. In the female the two pilary systems show a similar differentiation, which may even result in a *masculine* type of pilary distribution. Sicard and Reilly have reported the case of a woman of 30, suffering from a pituitary symptom-group, in which, besides cessation of the menses, there occurred marked loss of hair, previously very abundant. Simultaneously pilary development took place on the face, arms, and legs, forming in spots actual hairy patches. The author himself had previously reported the case of a woman who at the menopause grew a beard, as well as hair on the abdomen and thorax. In this patient, moreover, the voice became masculine and the clitoris so hypertrophied as to resemble a small penis. Simultaneously, baldness of the ordinary masculine type set in. Analysis of this case seemed to warrant ascribing the condition to the adrenals. The blood-pressure was high (not far from 300 mm.); glycosuria was present; the blood-serum caused slight mydriasis when applied to the enucleated frog's eye, and in the vicinity of the uterus was a mass, which might have been of parasuprarenal origin.

Cases such as the above are not exceptional. In another case previously reported by the author a young Russian woman went through her first pregnancy and labor without difficulty, but in the following year presented dystocia with hemorrhage, anasarca, and fever. Later, her scalp hair fell out, but hair

appeared on the chest, arms, legs, abdomen, and back, and a long beard was grown. The hair on the legs was 4 to 5 cm. long. Von Eiselsberg has reported the case of a myxedematous woman in whom similar pilary changes took place.

In brief, a masculine type of pilary instability may be met with in woman under various conditions, viz., in myxedema, hypophyseal syndrome, adrenal disturbance, and pregnancy. Sometimes at the menopause loss of cephalic hair coincides with a growth of hair on the upper lip.

II. Another form of pilary abnormality may be designated as the *early* (précoce) *feminine type,* and is exemplified in a case of Kendle, viz., a cretin 9 years old who showed abnormally early puberty, the breast being well developed and coarse hair growing on the pubes and in the axillæ. Menstruation became established at the age of 5 years and 2 months, and the menses recurred at intervals of two to four months, lasting three to five days each time and corresponding with the adult menstrual flow in amount. Under thyroid treatment, besides a marked gain in height, some loss in weight, and mental betterment, teeth were cut, the coarse hair was replaced by fine hair, and the menstruation ceased. The breasts diminished in size, the axillary and pubic hair disappeared, the voice assumed a higher pitch, and the entire system seemed to revert to a more child-like type.

Discussion.—From previous clinical, therapeutic, and experimental studies the author had reached the following conclusions: (1) The thyroid exerts a specific action on the scalp hair, lids, and eyebrows; (2) the ovary and testis act similarly on the pubic and axillary hair; (3) the testis, in addition, holds under direct subordination the hair of the body, the beard, and the mustache; (4) the pituitary and adrenals exert an indirect (through the testis) influence on the body hair, exclusive of the scalp hair, lids, and eyebrows.

In Type AI of the pilary abnormalities above discussed the testicular insufficiency is responsible for the lack of hair on the lip, chin, and pubes. In infantilism of thyroid or pituitary origin testicular insufficiency is, nevertheless, again responsible. The excellent condition of the scalp hair in these cases shows that the thyroid does not necessarily participate in the complex of testicular insufficiency. In the hypertrichosis of infantile cases, however, there appears to be exaggerated trichogenous function on the part of the thyroid, which, by reason of the testicular insufficiency, undergoes a compensatory excitation. It is well known that in infantilism excessive functioning of the thyroid (and pituitary) reacts on the osseous system, giving rise to infantile gigantism. An analogous condition apparently can be produced as regards the hair, testicular insufficiency causing what might be termed a "capillary gigantism." Thus, by this, the feminine type of pilary instability, there is brought to one's attention an inhibitory action of the testis on the scalp hair.

In Type AII, the virile form, the exaggerated growth of hair on the body and chin is due to hyperorchidism. As for the loss of cephalic hair, the author had already shown that thyroid disturbance may cause loss of hair

in two ways, viz., either through hypothyroidism, as in the paucity of hair of old age and myxedema, or through hyperthyroidism, alopecia being by no means rare in exophthalmic goiter. In the individuals with hyperorchidism all the evidence available goes to show that the loss of cephalic hair is due to hyperthyroidism. Thus, these subjects often show well-developed eyebrows. Again, conditions under which baldness occurs—baldness being frequent among subjects with highly and precociously developed brains, and tending to some extent to occur in intellectual women—can be accounted for through hyperthyroidism. On the whole, hyperorchidism appears to cause hyperthyroidism, which, in turn, by inducing overexcitation of the pilary structures, finally results in their exhaustion. Why should thyroid excitation be capable of producing under one condition a superabundance of hair and under another loss of hair? Factors other than the hyperthyroidism must be taken into account. The quality of the pilary system may be a factor in the final result; but there must be borne in mind the manner of excitation of the thyroid, which, while continuous in testicular insufficiency, may take place intermittently, by "hitches," in hyperorchidism. Or, the intensity of the excitation may account for the differences in result. A given excitant to the scalp, indeed, by producing an intense or a slight congestion of the hair papilla, may in the one case cause the hair to fall out, in the other to grow.

In Type BI the problem as to the appearance of a beard and hair on the body in the female sex can be solved in several ways, even if one restricts the viewpoint to dysendocrinic masculism. The latter is always dependent upon ovarian disturbance. Just as testicular insufficiency, as already stated, may be either primary or secondary to thyroid or pituitary disorder, so ovarian disorder may be either primarily ovarian or secondary to pituitary or other disturbance. It may be, as suggested by Klotz, that the ovary is originally a duplex, hermaphrodite organ, partly feminogenous and partly virilogenous; where there was produced an intubation or destruction of the former property, the virilogenous activity might be resumed, this, in turn, being the equivalent of hyperorchidism in the male and leading to a similar, or masculine, type of hair loss.

In Type BII, or the early feminine variety, the condition is an instance of excessive reaction on the part of the ovary to insufficiency of another ductless gland, the thyroid. The appearance of pubic hair in the child 5 years old was merely a manifestation of hyperovarism. The subsequent disappearance of this hair, as well as the other signs of puberty, upon administration of thyroid gland bore witness to the thyroid insufficiency and ovarian excess as etiologic factors.

ACUTE THYROIDITIS AS A COMPLICATION OF ACUTE TONSILLITIS.*

By CLEMENT F. THEISEN, M.D.,

ALBANY, N. Y.

Of 7 cases of acute thyroiditis that have come under the writer's observation, in all except 1 case the inflammation of the thyroid gland occurred with or directly after attacks of tonsillitis. Two of these patients each had two distinct attacks of acute thyroiditis, each time with an acute tonsillitis, and both later developed well-marked diffuse goiters. In all of the cases reported, the inflammation of the thyroid occurred in a previously healthy gland of normal size. For this reason, and because in no case suppuration occurred, the cases belong in the class described by Mygind and other authors under the name "thyroiditis acuta simplex," particularly to distinguish them from cases of acute strumitis, in which the disease involves the already hypertrophied thyroid gland. Suppuration occurs much more frequently in the latter class of cases, and they are not as uncommon, occurring sometimes with pneumonia, measles, typhoid fever, influenza, diphtheria, etc.

The writer's thyroiditis patients were all girls or young women, and the literature shows that this is true in the majority of the cases. The only case that did not occur with tonsillitis developed during a pneumonia. Two cases had attacks of hyperthyroidism, with all the typical symptoms, developing soon after the attacks of acute tonsillitis and thyroiditis.

Simple acute thyroiditis must not be confused with acute hyperemia of the thyroid gland, such as is seen in anomalies of menstruation and acute infectious diseases. It is not uncommon in measles epidemics, particularly in Switzerland, where goiter is endemic.

The first of the author's cases is described as follows:—

Case I.—Miss L. B., aged 20 years, came into the Nose and Throat Clinic with a history of sore throat for several days. On examination a typical acute follicular tonsillitis was found. The thyroid gland was greatly and uniformly swollen, with some redness of the skin, and was very tender to the touch. This had developed during the third day of the tonsillitis, and the patient stated that the gland was not enlarged before her attack of tonsillitis. The swelling increased during the next two days, and there was some dyspnea, undoubtedly caused by tracheal compression. Deglutition was very painful, but there was not as much dysphagia as in some of the other cases, perhaps because the left lobe of the gland was not more involved than the other parts. Temperature was 103° F. for several days.

The usual treatment for the tonsillitis was given, and an ice coil was kept around the neck constantly until the swelling of the thyroid gland subsided—in about a week. The temperature gradually dropped, being normal within a week and remaining so.

The patient would not consent to a tonsillectomy, and the following winter came to the clinic with a similar attack of thyroiditis, running the same course and again developing with an acute tonsillitis. She came to the clinic the succeeding two years, and while there were no further attacks of acute thyroiditis, she de-

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* Summary of article in the New York State Journal of Medicine, Dec., 1913.

veloped a diffuse goiter. It is at least possible that etiologically there was a connection between her attacks of thyroiditis and the subsequent hypertrophy of the gland. There is no doubt that the infection of the gland was each time caused by the acute tonsillitis.

The only internal medication that the writer's patients received was calomel in the beginning of the attack and hexamethylenamine in large doses freely diluted. None of the cases went on to abscess formation in the gland. The constant use of the ice coil was of the greatest service and always reduced the acute congestion of the gland very promptly.

PITUITARY EXTRACT IN OBSTETRICAL PRACTICE.*

By B. P. WATSON, M.D., Ch.B., F.R.C.S.E.,
TORONTO, ONT.

Pituitary extract was used by the author in 2 cases of incomplete abortion, with retention of the placenta, between the third and the fourth month. In neither of them did spontaneous expulsion occur, though each case had 2 injections within two hours. In the early months of pregnancy, while uterine contractions may be induced, these are usually insufficient to expel the ovum, and its expulsion is further impeded by spasmodic contraction of the internal os. It should, therefore, only be given in cases where the os is widely dilated. In septic cases, with retention of the ovum or part of the ovum, it should not be employed, as the stricture of the os may render manual separation more difficult than it would otherwise be.

In the induction of premature labor the results are somewhat better, although by no means uniformly satisfactory. Stern was among the first to employ the drug for induction, and he succeeded in 2 cases out of 3. In both the indication was tuberculosis of the lungs and larynx, and in each spontaneous delivery occurred. The author has used it successfully in a similar case. These successful cases are the exception, however, and a great number of unsuccessful results are recorded. At full term and in postmature cases the results are more certain. Fries was successful in 2 normal cases at full term. Herzberg also succeeded with 2 patients, 1 of them an epileptic. Krakauer brought on labor in an eclamptic at full term. The author was successful in inducing labor in 3 cases in which pituitrin was used, 1 at the eighth month, 1 at full term, and 1 three weeks postterm. Such success is not in accordance with the experience of most other obstetricians, but the author is sure that a further trial is justified. The important point is to administer a second dose before the effects of the first have passed off. If the contractions are sufficiently strong to dilate the cervix, the rest of the labor usually goes on naturally. If, therefore, as a result of one dose only a

* Summary of article in the Canadian Medical Association Journal, September, 1913.

small amount of dilatation occurs, and no second dose is given, the cervix may again close and labor pains cease. In postmature cases the drug can do no harm, and is certainly worth trying before adopting other means.

For the induction of labor in cases of eclampsia its use may be attended with some danger, as blood-pressure, already high, may be raised to a dangerous degree. Fries, however, used it successfully in 2 cases of nephritis, and Krakauer and others used it in cases of eclampsia, both in the first stage of labor. In one case the pulse was slowed from 160 to 76; several fits occurred after delivery, but another dose of pituitrin was given, and the fits ceased. Bad results are recorded by Nagy, Schneider-Sievers, and Töpfer.

A number of very successful results in the treatment of placenta prævia have been recorded. In the absence of pains or when the pains are feeble a single injection very often stimulates strong contractions, so that the presenting part is pressed down against the lower uterine segment and hemorrhage is arrested. Hofbauer recommends that in lateral and marginal placenta prævia, with the head presenting, the membranes be ruptured and pituitrin injected. If the placenta stretches halfway across the os, he inserts a hydrostatic dilator. Trapl adopts the same line of treatment, and in a series of 16 cases had no maternal mortality, and a fetal mortality of only 3, while in 2 of these the child was dead before the pituitrin was given. Pituitrin treatment may also be combined with version in such cases. In the author's case the pituitrin induced labor pains and enabled version to be performed much sooner than would otherwise have been the case. Tearing of the cervix may have resulted from powerful uterine contractions, but it is known that such tears are apt to occur through the softened vascular cervix in cases of placenta prævia.

When given about two minutes before Cesarean section pituitrin has a marked effect in diminishing the loss of blood. A number of operators have used it for this purpose. In the Tarnier clinic it was found to be inefficient in 2 cases out of 4, and in these ergotin gave good results. Fischer injected it directly into the uterine wall, and the uterus at once contracted and all hemorrhage ceased.

Pituitrin may also be used in osteomalacia. The influence of pituitrin upon the growth of bone is well known. It is stated, however, that, while it may relieve the pain, it does not effect a cure.

As a galactogogue, the author used it in several cases. It was difficult to estimate the exact effect produced, but in all cases the children, who previously appeared to be hungry after feeding, were satisfied and quickly gained in weight.

In some women, more especially elderly primiparæ, pituitrin appears to have no effect at all. In others it may produce general symptoms, cardiac distress, vertigo, tachycardia, and respiratory difficulty, which have been reported by various writers. The same set of symptoms was observed by Hofbauer after intravenous injection, and it may be that some of those results following subcutaneous or intramuscular injection were due to the needle entering a vein.

In its action on the uterus pituitrin may set up tonic or tetanic contractions, and may cause a spasm of the internal os. The first contraction after the injection is given is usually a prolonged one. Hamm, for instance, reports a case in which 4 injections were given. After the second the first pain lasted eight minutes, after the third eleven minutes, and after the fourth seventeen minutes. After this first powerful contraction the uterine action is usually normal. When the contractions are very powerful and painful they may be controlled by the administration of an anesthetic, or by the use of morphine or omnopon. The ordinary scopolamine-morphine method may be successfully used along with pituitrin.

Spasm of the os may occur in cases of abortion, when the drug is given for the induction of premature labor or early in the first stage. Heil reports a case where the birth of the second of twins was arrested, owing to spasm of the os following pituitrin injection. Nagy had to incise the cervix in one case, owing to spasmodic rigidity, while Roemer had to remove the placenta manually in 2 cases, owing to stricture of the os. In a case of sacculated retroflexed uterus, with forward displacement of the cervix, Koch inserted a hydrostatic dilator and gave 1 c.c. of pituitrin. Strong contractions occurred, but no dilatation of the cervix took place. Apparently there was spasm of the os. Cesarean section was ultimately performed, but the child died.

A number of cases have been reported in which pituitrin was given, and in which atony of the uterus occurred after the termination of the third stage. In most of these the last injection had been given a considerable time before the birth of the child. When the last injection has been given within a short time of the birth of the child and placenta, the uterus usually remains firmly contracted. If there is any tendency to relaxation the ergot preparations usually act well.

Any bad effects of pituitrin on the child are due to the prolonged contraction of the uterus. In nearly all cases marked slowing of the fetal heart is observed, but usually the child is in no danger. Nagy had to deliver rapidly with forceps in one case in order to save the child. Koch and Spaeth report death of the child in breech presentations after pituitary injections. In both cases delivery was rapid and easy.

Unusual effects have been mentioned in a few cases. There was spasm of the glottis in one case reported by Hamm, and contracture of the extremities, lasting for twenty-four hours, in a case reported by St. Antechi and Zaczewski. It is difficult to say whether these were due to the pituitary or not.

On the whole, the chief field of usefulness of pituitrin is in the first and second stages of labor, when there is delay due to feebleness of the pains, alone or when combined with other complications, such as malpositions of the head, malpresentations, multiple pregnancy, slight narrowing of the pelvis, etc. It gives good results in many cases of post-partum hemorrhage, but is not superior to the various preparations of ergot. It has the power, however, of sensitizing the uterus so as to allow these preparations to act more powerfully, the combination being most effective.

INTERNAL SECRETIONS AND DENTAL CARIES, WITH SPECIAL REFERENCE TO THYROID INSUFFICIENCY.*

By H. P. PICKERILL, M.D., M.D.S.,

OTAGO, NEW ZEALAND.

The glands the secretions of which may possibly influence the resistance of the tissues to caries are the thyroid, the pituitary, and the thymus.

Thyroid Insufficiency.—Of recent years attention has been drawn by Dr. Leonard Williams and others to the fact that calcium utilization in the body is intimately associated with the metabolism of the thyroid gland. From clinical evidence the writer is inclined to think that there is an association between that condition seen in children which is now diagnosed as thyroid insufficiency and the presence of dental caries. In order to obtain some precise data as to the possible effect on the teeth produced by loss of the internal secretion of the thyroid, thyroidectomy was performed by the author on a number of young rabbits. The single animal which survived was kept for over a year and then killed; it thrived well and was apparently perfectly healthy; *post mortem* there was no trace of thyroid gland present.

In order to ascertain to what extent any deficiency of osseous development might be due to deficient digestion or absorption in the intestines, the amounts of undigested starch and of calcium in the feces of this rabbit were estimated on several occasions and compared with those of normal control animals. The amount of starch undigested in the feces was found decidedly low (18 per cent.); the writer had not previously observed it in normal rabbits to be below 20 per cent. under any circumstances. This increased utilization of starch probably accounted for the animal's general fat condition. The loss of calcium was considerably in excess of the normal (1.168 instead of 0.634 per cent.), and it might be supposed that this would have a prejudicial effect upon the calcium content of the bones and teeth.

The teeth were to the naked eye well formed and normal, the only difference being that they were extremely white and quite devoid of that yellowish staining and fine black deposit which is almost universally present on rodents' and other animals' teeth, and also in many cases on human teeth immune to caries. This particular form of black stain or deposit is not due to accidental staining by tobacco or foods, but is "biochemical" in origin, being produced either by chromogenic bacteria or from hemoglobin. The specific gravity of the teeth was estimated by the pycnometer method and compared with that of similar teeth in controls. The control teeth showed a specific gravity of 2.49, while those of the thyroidectomized animal gave a slightly lower figure, 2.46. This difference is not apparently great, but the writer had previously shown that the enamel of human teeth, demonstrably different in several physical properties, differs only to a similar degree in density. On analysis the teeth of the thyroidectomized animal showed

* Summary of article in the Interstate Medical Journal, May, 1914.

slightly less ash than the controls—79.16 per cent. instead of 80 per cent.—*i.e.*, the teeth after thyroidectomy contained 0.84 per cent. more organic matter than normal. The calcium in the teeth was estimated and showed that the ash of the thyroidectomized animal's teeth contained 2.1 per cent. less calcium than that from the control's teeth.

The saliva was, on 7 different occasions, obtained from the thyroidectomized and control rabbits by aspiration from the mouth for five minutes after the subcutaneous injection of pilocarpine (1 mg. per kilo.). Apparently the thyroidectomy somewhat reduced the output of alkaline salts from the salivary glands, and this was not made up for by any increase in quality of saliva. The saliva of the thyroidectomized rabbit was found to contain slightly less calcium than the control—0.206 instead of 0.22 per cent. That the salivary glands do tend to show a correlated variation with the thyroid gland was supported by the fact that *post mortem* the submaxillary salivary glands were found to be much below the normal in proportion to the weight of the animal; thus the average weight of submaxillary salivary glands in normal full-grown rabbits was found by the author to be 0.3473 Gm. per kilo. of body weight, whereas in the thyroidectomized rabbit it was only 0.2268 per kilo.

It is to be observed that the variations in the thyroidectomized animal, although slight, are all in one direction—viz., in that which would *lower the resistance of the teeth to disease.* This coincides with clinical observations. The result, therefore, goes to support the theory that thyroid insufficiency may favor the occurrence of caries of the teeth.

The Pituitary Gland.—As is well known, the secretion of this gland has an influence upon the morphology of the jaws, excess of secretion leading to increased growth and deposit of bone (which implies increased local fixation of lime salts), while probably a decrease leads to the condition called *progeria,* in which the jaws remain infantile in character and growth, and local utilization of lime salts is defective. Keith has suggested that the internal secretion of the pituitary acts as a "sensitizer" between the nerve-fibrils and the functioning cells, enabling the neurotrophic influence to exert more readily a stimulating effect upon osteoblasts. But why should it be limited to osteoblasts? It is quite possible that ameloblasts may be similarly affected. It is worth inquiry whether pituitary deficiency may not be a contributing cause to the imperfectly "finished" enamel prisms which Keith has shown to be commonly present on the surface of teeth susceptible to caries. This imperfect finish consists in minute depressions at the ends of the prisms, which increase the adherence of foreign matter and expose a larger and more vulnerable surface to the action of fermentation acids.

The Thymus Gland.—This gland, normally only a temporary organ, disappearing after infancy, has also been suggested as playing a part in the etiology of caries. Basch has found that in puppies osseous development is retarded by thymus excision. If the thymus does play a part in relation to the teeth, this could only be in connection with the deciduous teeth.

Abstracts from Current Literature on the Internal Secretions

Combined Action of Cocaine and Epinephrin on the Pupil.—To account for the fact that epinephrin mydriasis takes place in experimental animals only after ablation of the superior cervical ganglion, Meltzer and Auer have advanced the following explanation: Since instillation of epinephrin does not cause the pupillary dilatation in the normal animal or that in which the sympathetic has been cut below the superior cervical ganglion, epinephrin must act on the dilator muscle of the iris, causing it to contract. This contraction, however, cannot be manifest, because of the power which the ganglion possesses of inhibiting pupillary dilatation.

The author conducted experimental researches in rabbits. In these animals the sympathetic was cut between the superior and middle cervical ganglia. At least four weeks later, cocaine solution was instilled and after it epinephrin solution. Control instillations were made on the side on which the sympathetic had not been cut. In all instances epinephrin instilled on the operated side after cocaine failed to cause more than 1 mm. of pupillary dilatation, whereas after cocaine instillation 1 drop of epinephrin solution caused a maximal mydriasis equal to that obtained with epinephrin alone in animals in which the superior cervical ganglion had been removed. The results are the same whether epinephrin be injected before cocaine; whether the two agents be mixed and injected together; whether cocaine be injected intravenously and epinephrin instilled into the eye; whether cocaine be injected under the conjunctiva and epinephrin instilled, or whether epinephrin be injected intravenously and cocaine instilled.

In the normal animal cocaine, besides exerting its own mydriatic effect, sensitizes the dilator muscle of the iris to the subsequent action of epinephrin, since the latter then greatly increases the dilatation. The author concludes that cocaine, in addition to stimulating the dilator mechanism of the pupil, paralyzes the mechanism of inhibition of pupillary dilatation, probably by an action on the terminals of the inhibitory fibers believed to extend upward from the superior cervical ganglion.

In the human subject the author's tests led to the following conclusions: (1) In subjects with equal and normally reacting pupils, after cocaine has been instilled on both sides, epinephrin instilled in addition on one side causes an increased dilatation and, therefore, anisocoria. In all instances instillation of epinephrin alone did not cause mydriasis. (2) In subjects with equal pupils or with anisocoria, but reacting to light and accommodation, cocaine instilled on both sides produces an anisocoria or increases it if previously present. Epinephrin then instilled into the eye with the smaller pupil causes reversal of the anisocoria.

(3) In subjects with one normal pupil reacting to light and accommodation, but with a unilateral oculosympathetic symptom-complex and myosis due to sympathetic paralysis, cocaine does not act on the pupil with the myosis of sympathetic origin, but epinephrin instilled afterward caused mydriasis in this eye. Instillation of epinephrin alone always failed to cause mydriasis in either eye. (4) In subjects with rigid pupils and in those with permanent myosis cocaine-epinephrin mydriasis is almost or entirely wanting. Mattirolo (Rivista critica de clinica medica, No. 6, 1913; Revue de thérapeutique médico-chirurgicale, April 15, 1914).

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Chronic Rheumatism Due to Thyroid Insufficiency.—Some clinicians, the author avers, are still disposed to deny the existence of a chronic, progressive, and deforming rheumatism due to thyroid disease. The reason is that these observers have not paid enough attention to the clinical features of the cases, taking into consideration merely the action of thyroid preparations administered. It is not sufficient to cure cases of migraine, asthma, psoriasis, or rheumatism by opotherapy in order to conclude that these disorders have been due to glandular deficiency. The effect of the treatment constitutes at most a presumptive indication in favor of the special pathogenesis of the disease. A case such as the following, on the other hand, is convincing: A young woman had an attack of acute articular rheumatism at 18. Three years later, there was pain in the neck, fever, and a tender swelling of both lobes of the thyroid. The treatment consisted of a milk diet, quinine sulphate, pyramidon, and two days later a purge of sodium sulphate and magnesium sulphate. Improvement was noted and the quinine discontinued. Four days later there was no fever; eggs and vegetables were allowed. The patient gained in weight, but about six weeks later complained of dyspnea and pain in the left elbow. The thyroid was found atrophied. Six drops of tincture of iodine were given twice daily for three weeks in each month. Three months later, there was constant pain in the knee, elbow, shoulders, ankle, and calf muscles refractory to aspirin and salophen. The patient complained of fatigue and was irritable. Iodalose, 6 drops at lunch and dinner, was ordered. The pain was relieved. Six months later the pain reappeared. Migraine and vomiting; diminished mental capacity; apathy and indolence. Thyroidin, 0.1 Gm. (1½ grains) daily, was begun, but the vomiting and diarrhea necessitated discontinuance of this measure. About two months later, the treatment was resumed, but with smaller doses, 0.05 Gm. (¾ grain) a day. In a few days the dosage was increased to 0.1 Gm. Diarrhea again brought the treatment to a stop; but the symptoms of thyroid insufficiency becoming more marked, two additional series of treatments (0.1 Gm. daily) were ordered. Five months later, regular organotherapy (0.05 Gm. daily) was instituted, which was well borne and improved the patient's condition. The headaches and somnolence ceased, and the mental processes were reawakened. The young woman continued the thyroidin for eighteen months and has been

in excellent health since (over two years having elapsed). The history of this case is almost as illuminating as a laboratory experiment. The obesity, asthma, migraine, and rheumatism were evidently due to thyroid insufficiency, since they followed an inflammation of this organ and yielded to organotherapy. P. Ménard (International Medical Congress, London, August, 1913; Revue de thérapeutique médico-chirurgicale, November 1, 1913).

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Goiter and Hyperthyroidism Occurring in Association with Dilatation and Aneurism of the Aorta.—Examination of Röntgen plates of cases of aortic dilatation and aneurism of various types reveals in the majority of cases enlargement of the thyroid gland. The author's observations were made for the most part in men 40 to 50 years of age with histories of syphilis. The thyroid enlargement extends in most instances back behind the sternum, and is but slight or at most of moderate degree, but the whole gland is equally involved. There is therefore no compression or stenosis of the air passages, stridor, or asphyxial attacks. On the other hand, evidences of hyperthyroidism, in particular tachycardia, are not infrequently present. The thyroid enlargement is in some of the cases demonstrable by inspection and palpation alone. It must be ascribed mainly to venous hyperemia, this in turn being due to pressure of the broadened aorta, especially its ascending portion and arch, upon the vena cava and perhaps also upon both innominate veins. The condition is thus primarily a vascular or static goiter, but it may gradually result in hyperplasia of the glandular tissue. Venous stasis of the face is not present, this apparent discrepancy being probably accounted for by the fact that the thyroid gland is the most vascular organ in the district of the superior vena cava and is therefore affected more readily than other parts by interference with the outflow of blood. In the treatment of this condition the primary affection,—syphilis and aortic disease,—of course, requires chief attention. Kienböck (Fortschritte auf dem Gebiete der Röntgenstrahlen, vol. xxi, No. 4; Zentralblatt für Chirurgie, April 24, 1914).

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Ovarian Therapy in Tuberculosis.—Ovarian extract, as shown first by Wittgenstein some years ago, lowers the virulence of the tubercle bacillus. It also exerts an action antagonistic to toxins. Its use in tuberculosis is therefore justifiable. It is best given in the form of the powdered dry entire gland, which causes no gastric disturbance or untoward effect on the lungs. Ovarian medication promptly overcomes hemoptysis, especially when, coming on at puberty or the menopause, the hemoptysis is related to disturbed ovarian functioning. The relationship of ovarian disorder to hemoptysis can frequently be noted clinically and its actual existence is confirmed by the favorable effect of organotherapy. If the treatment be applied long enough menstruation is observed to become regular or the menopause to set in in a normal manner. Pulmonary hemorrhages cease, the febrile temperature is lowered, the

general condition improves, and frequently even the tuberculous process comes to a standstill and local fibrosis tends to occur. The efficacy of ovarian treatment is increased by the addition of other organic products, such as adrenal or splenic extracts, or preparations derived from the blood. Combined ovarian and hepatic administration may also be employed in view of the hemostatic action of the liver, pointed out by Gilbert. Combined ovarian and pituitary treatment was tried by the author in but one case, with indifferent results. Thyroid treatment is contraindicated. In a tuberculous epileptic subject with monthly seizures alternate ovarian and parathyroid treatment considerably lessened the number of attacks. Duchamp (Journal de médecine de Paris, February 28, 1914; Revue de thérapeutique médico-chirurgicale, May 1, 1914).

* * *

Uses of Pituitary Extracts and of a Combination of Epinephrin and Pituitary Extract in Ophthalmology.—By combining the adrenal active principle with pituitary extract the author obtained a preparation which proved to be of real value as a vasoconstrictor and hemostatic in ophthalmic surgery and even as a therapeutic agent in affections of the conjunctiva. The solution used was a clear fluid, of slightly acid reaction, each cubic centimeter of which contained the active principle of 0.2 Gm. of fresh pituitary (posterior lobe) from the ox. Twenty grams of this fluid were mixed with 1 Gm. of 1:1000 adrenalin solution. Repeated instillation of this solution has no effect on the corneal epithelium, which preserves its normal transparency and brilliancy. The solution was used by the author in 8 patients suffering from various eye affections. It was observed that the ischemia of the conjunctiva obtained with the solution was less prompt in appearing than that induced by epinephrin alone, but that it lasted longer and extended more deeply into the dermis of the conjunctiva. The pupil was slowly dilated by the solution, but accommodation was unaffected. The intraocular tension was unchanged. The author concludes that this solution is very useful in certain eye operations, *e.g.,* sclerotomy, iridectomy, tenotomy, intervention for pterygium, chalazion, etc. Its mydriatic action facilitates examination of the fundus. When used in conjunction with pilocarpine, eserine, or atropine, it reinforces their action. R. Arganaraz (Semana medica, Buenos Aires, September 4, 1913; Revue de thérapeutique médico-chirurgicale, December 15, 1913).

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Limitations of Treatment by Pituitary Extracts.—Most of the untoward phenomena reported from pituitary medication can be referred to nervous or blood-pressure effects. With the dose permissible in the human subject, no case of injury to the kidneys has as yet been reported.

In a transverse presentation the drug is positively contraindicated, but it may safely be administered in a breech presentation.

It is well to consider any ecbolic action contraindicated in cases which present signs of dilatation of the lower segment of the uterus.

Since the reaction of the uterus to the stimulant cannot be predetermined, it is well to begin with a small dose.

Pronounced intrauterine asphyxiation of the child may occasionally occur, and is always an indication for prompt termination of labor—usually the application of the forceps. This can hardly be considered a disadvantage, as the drug obviates one-third if not one-half of all former forceps deliveries.

Pituitrin is useful in bringing on labor or in producing abortion, but in cases of suspected infection, or in abortions accompanied by fever, it is advisable to avoid a violent increase of labor pains before all the contents of the uterus have been expelled.

As with all drugs producing hypertension, great care should be exercised in the use of the remedy in non-compensated or only slightly compensated heart defects, in arteriosclerosis, and in nervous patients.

The preparations used still labor under the disadvantage that knowledge of their contents of physiologically active substance is not exact. Many of the apparent failures may be attributed to this source. Hofstätter (Monatsschrift für Geburtshülfe und Gynäkologie, vol. xxxviii, p. 142, 1913; Therapeutic Gazette, March, 1914).

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The Parathyroid Glands in Disease of the Thyroid.—The author's article, occupying 128 pages, is based on the operative or necropsy findings in 25 cases of goiter and on examination of specimens after operation in 18 cases. The exophthalmic goiter material included 3 operative cases, 2 necropsies, and 30 specimens examined after removal. The results of the research all testify to the superiority of Kocher's enucleation-resection technique as permitting the removal of the thyroid as needed without injuring the parathyroids, and because it obviates the necessity for ligating the main trunk of the inferior thyroid artery. The author's findings also confirm the importance of the parathyroid glands, as independent organs, with a vital and indispensable function. He found in 96 normal cases that there were only 2 parathyroids in 2 per cent., 3 in 9 per cent., 4 in 81 per cent., and 5 in 7 per cent. They averaged 2 by 4 by 6 mm. and were located at the rear margin of the lower pole of the thyroid, close to the branches of the artery and the recurrent nerve. With goiter, he found 2 parathyroids in 4 per cent., 3 in 36 per cent., 4 in 56 per cent., and 5 in 4 per cent. In 4 out of 5 exophthalmic goiter cases there were 4 parathyroids and in the other only 2. He found that the parathyroids had been removed with the goiter in about half of the cases operated with techniques other than Kocher's. T. Iversen (Archives internationales de chirurgie, vol. vi, No. 3; Journal of the American Medical Association, March 28, 1914).

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Neuroblastomata Arising from the Sympathetic System.—Neuroblastomata occur much more frequently than is generally recognized, even though they are composed of the most highly differentiated cells in

the body, the nerve-cells. During the year 1913, 7 cases were reported. These tumors may occur in any part of the nervous system, but in the majority of the cases occur in connection with the sympathetic.

In the author's case there were 2 tumor masses, the one situated in the region of the celiac plexus and the other occupying the position of the left adrenal gland. Metastases were present in the liver and both kidneys. The case had been diagnosed as tuberculous peritonitis, and the findings mentioned were made at autopsy.

A neuroblastoma is any tumor composed of newly formed true nerve elements, which may be either differentiated or undifferentiated in character. In the sympathetic system the undifferentiated neuroblastomata are of two types, the ganglioneuroma and the chromaffin tumor, while the undifferentiated tumor is the so-called malignant neuroblastoma. The two types of differentiated neuroblastomata are almost invariably benign, while the undifferentiated form is very malignant. Although the three types differ widely in many respects, they are derived from a common mother-cell. H. R. Wahl (Experimental Medicine Section, Academy of Medicine of Cleveland; Cleveland Medical Journal, December, 1913).

* * *

Tumors of the Kidney, Suprarenal, and Testicle.—Reports of a study of the operative and autopsy material from the Mayo Clinic, consisting of 92 renal tumors, 3 adrenal tumors, and 21 testicular tumors. The most numerous tumors of the renal cortex, the so-called hypernephromas or Grawitzian tumors, are apparently mesotheliomas derived from the nephrogenic vesicles which have failed in the early embryo to form a tubular connection with the renal pelvis. The renal cortex is also frequently the site of inclusions from the mesonephros, and rarely of inclusions from the suprarenal gland; but rarely, if ever, do either of these inclusions in the renal cortex form malignant tumors.

Of the 3 primary adrenal tumors, 1 was an adenoma and 2 were hypernephromas from the adrenal cortex. Primary malignant tumors of the adrenal are either round-celled sarcomas or more frequently hypernephromas. Adrenal hypernephromas frequently induce abnormalities of sex and strength. Tumors of the adrenal, in whatever stage of their development, bear no histologic resemblance to most mesotheliomas (so-called renal hypernephromas).

Of the 21 testicular tumors, 19 were teratomas. These, in harmony with Ewing's hypothesis, arise from sex cells the normal development of which has been suppressed. L. B. Wilson (Annals of Surgery, April, 1913).

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Treatment of Exophthalmic Goiter with the X-rays.—Analysis of 12 cases of exophthalmic goiter thus treated. Four were cured; the exophthalmos and goiter had gone, and no symptoms remained. Five —1 of which had been operated upon—were greatly improved. Three were improved, 1 having also been operated upon, and 2 still remaining

under treatment. The exophthalmos disappeared in 4 cases, was slight in 3, and marked in 5, 2 being still under treatment. The skin was normal in 7 cases; there was slight telangiectasis in 4, and marked telangiectasis in 1. These latter were the author's earliest cases, and the number of exposures given was much greater than had been since found to suffice. All the patients expressed themselves as much better, and stated that their weight had increased. In none was there any sign of myxedema—a point of interest, since in a case the author had recorded some years previously, in which he thought myxedema had developed, the patient got very fat at the end of the treatment, which had lasted two years, and the hair over her forehead began to fall. Recently, however, her appearance had been normal. All the author's cases were treated with the X-ray tube at a distance of 18 to 12 inches from the skin, the surrounding part being screened off by a 4-inch thickness of felt. The patients had attended either two or three times a week for periods up to two years. Bruce (Proceedings of the Royal Society of Medicine; Charlotte Medical Journal, March, 1914).

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Epinephrin and the Blood-pressure.—Experiments carried out to ascertain the effect of hypodermic injections of epinephrin on the blood-pressure. Ten minims of epinephrin solution (1:1000) was the quantity used on each occasion. The effect in all the experiments was to decrease the diastolic pressure more than the systolic was raised; the persistence of the diastolic fall was also generally greater than the persistence of the systolic elevation. Palpitation, tremulousness, and faintness were generally experienced after the injection. Epinephrin having been proved to cause contraction of the peripheral vessels, the great depression of the diastolic pressure it produces cannot be due to diminished peripheral resistance. It would seem that it must be accounted for by increased freedom of outflow at the aortic orifice for the blood in the arteries. The author points out that the condition of systolic and diastolic pressure observed in his experiments resembles that commonly found in aortic regurgitation, and this suggested to him that one of the physiologic actions of epinephrin in man might be to dilate the aortic orifice and produce a temporary regurgitation. This may explain the sudden collapse or death which has occasionally followed the injection of the drug into patients anesthetized with chloroform. Watson (Practitioner; Charlotte Medical Journal, March, 1914).

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Effects of Removal of the Hypophysis.—Report of experiments on 22 dogs. There are undoubtedly three well-marked changes which follow hypophysectomy. The first change concerns the pancreas. The second is the atrophy of the testicles, which is of very early appearance, being extremely marked by the end of the second week after operation. Whether or not this atrophy can be compensated for by the function of some part left behind or of some glandular rests which have been described

by Cushing in the floor of the sella turcica, one is unable to say. Increase in weight is of late appearance, and whether it be due to the loss of the hypophysis primarily or due to the secondary atrophy of the testicles is not at all clear.

These results agree with the recent work of Aschner, except in two particulars. Aschner worked almost exclusively with young animals, and inclines to the belief that the removal of the hypophysis from the adult dog is without effect. In the second place he ascribes the atrophy of the testicles to injury of the tuber cinereum. This point of view seems purely academic. There can be no agreement as to where the tuber cinereum ends and the infundibulum begins. The authors found no evidence in their work which would incline them to agree with Aschner in this particular. Sweet and Allen (Annals of Surgery, April, 1913).

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Thymus Extract in Graves's Disease.—Children bear thyroid preparations much better than adults and rarely acquire Graves's disease, perhaps because their active thymus is able to neutralize the excessive or morbid activity of the thyroid gland. This fact led the writer to try thymus extract in cases of exophthalmic goiter. She used 0.5 Gm. tablets of Poehl's thymin, which were given twice daily. A typical case of the disease gained 30 pounds in two months and improved so markedly that a contemplated operation was no longer indicated. A number of patients in whom operation had failed to yield improvement lost all of their symptoms as a result of the thymus treatment. In view of the harmlessness of the treatment it seems to deserve a trial. The drug was also found useful to overcome insomnia in neurasthenics, 2 tablets being given before bedtime. Rahel Hirsch (Deutsche medizinische Wochenschrift, Nu. 44, 1913).

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Pituitary Extract in the Treatment of Basedow's Disease.—The author reports the case of a man 32 years of age who had lost 30 kilograms in weight in a year's time. Upon admission he showed tremor of the hands and feet and was suffering from insomnia, diarrhea, vomiting, and dyspnea, and exhibited von Graefe's sign, a pulsating goiter, and a rather pronounced tachycardia. He was placed upon a vegetarian diet and given subcutaneous injections of pituitary extract for three months, receiving altogether 70 injections of ⅔ grain (0.04 Gm.) each. Under this treatment the patient's weight rose from 46 to 53 kilos., the heart rate fell from 140 to 92 or 100, the tremor lessened considerably, sleep returned, and the breathing became easier. Pal (Medical Society of Vienna; Semaine médicale, January 28, 1914).

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Metabolism after Pituitary Removal.—Report of experimental work on the metabolism of the hypophysectomized dog. The following conclusions were reached as to the effects of the operation: 1. A tendency to retard the normal growth of the animal; gain in weight principally due

to fat deposition. 2. A tendency to slightly lower body temperature, which by the time of death may result in a marked drop. 3. A marked fall in pulse and respiratory rates. 4. A marked fall in total metabolism as measured by carbon dioxide production. 5. Growth checked and infantile characteristics preserved; sexual activity, if not already present, never develops; if nearly or quite established, it is profoundly affected. 6. Sometimes a falling of hair and thickening of the skin is noted. The change in adult animals is hardly noticeable. Benedict and Homans (Journal of Medical Research, vol. xxv, No. 3, 1912).

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Obstetric Observations Pertaining to Internal Secretions.—Report of the cases of 2 patients, one a primipara of 27, the other a multipara of 42, who after simple spontaneous labors died within a few hours of vasomotor paresis. The pulse ran up to from 150 to 180, and was irregular and thready; this was followed by a drop to about 65, with low tension. A number of somewhat similar cases reported by other men are also mentioned. The author calls attention to the frequency with which thrombosis or embolism is given as a cause of death, and how infrequently it is found in cases coming to autopsy. It seems more probable that this cardiovascular collapse is due to some marked disturbance of internal secretion. The adrenal is the gland that is considered mainly responsible. Good (American Journal of Obstetrics, June, 1913).

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Adrenal Lesions from Tapeworm Toxins.—Of all the glands with an internal secretion, the adrenals seem to suffer most from the toxic action of helminths, whether the intoxication be acute or chronic. The thyroid may also show lesions, though infrequently except in subacute and chronic intoxication from this cause. The other ductless glands show but slight lesions. The author's research was done on guinea-pigs, injected with extracts of various tapeworms or with juice from a horse ascaris. The character of the lesions seemed absolutely the same, whatever the helminth, and the reaction seemed of the same nature as that due to microbic toxins or most chemical poisons. Bedson (Annales de l'Institut Pasteur, August, 1913).

* * *

Claude Bernard-Homer Syndrome in a Case of Goiter.—The authors report the case of a patient who had had a goiter since the age of 13, and developed a ptosis of the left upper lid, with exophthalmos and myosis easily observed in the dark, but without loss of the light reflex. There was no motor disturbance of the eye or dilatation of the central artery of the retina, but there was marked redness of the left cheek and ear. The condition was thus plainly one of paralysis of the cervical sympathetic from pressure by the thyroid body (not actually by the left lobe itself, but by a deep extension of this lobe to the left of the esophagus in the prevertebral region). C. and H. Fromaget (Journal de médecine de Bordeaux, March 8, 1914).

Department on General Medicine

Cyclopedia of Current General Literature

Appendicitis in Small Children, Diagnosis of.—From observation of 6 cases of appendicitis in children 15 months to 4 years of age the author concluded that these patients show no sign of localizing appendicular pain. Some scream and manifest violent anger; others seek to push aside with the hand something causing discomfort over the abdomen. Tenderness in the right iliac fossa is not present. In order to elicit an entirely unconscious sensitiveness in these cases, an indirect method such as those employed in the diagnosis of coxalgia in infants must be used. When light pressure is made over both iliac fossæ, the child will be seen to execute slight movements of the right leg. If the pressure be increased, the right leg will become rigid and irregular movements of the left leg executed. Often the face will be observed suddenly to flush when pressure is made with the finger over the appendix. Muscular rigidity is so slight as to be hardly perceptible. The prognosis in these cases is grave, as the child cannot keep completely still or withstand strict dieting. Operative intervention should be considered whenever the symptoms do not show a tendency toward prompt betterment. V. Veau (Société de Pédiatrie, Paris, January 13, 1914; Quinzaine thérapeutique, February 10, 1914).

* * *

Arthritis, Diagnosis of Chronic.—In the presence of a case of arthropathy the author finds it often convenient for diagnostic purposes to consider the following groups in serial sequence:—

I. *True chronic gouty arthropathy* is usually easy to recognize, at any rate in the typical cases. In atypical cases there may, however, be some difficulty in distinguishing it from atrophic or infectious forms of arthritis. The X-ray findings in a gouty joint are sometimes distinctive (spherical foci in the bone substance near the joint, or often in the form of a semicircular defect of the articular surface of a bone, with sharp, punched-out margins; if such a lesion be present in a joint of one foot there is often a similar lesion in the same joint of the other foot).

II. The *neuropathic arthropathies* are ruled out if, in addition to the examination of the joints, a thorough neurologic investigation be made (tests of sensibility, knee-kicks, pupils, etc.). Moreover, the sudden onset, the marked enlargement of a single joint, and the absence of severe pain are characteristic. The X-rays show bizarre, monstrous hypertrophic lesions; besides excrescences upon the bone and huge calcified free bodies, calcified masses are usually visible in the extracapsular tissues and there is usually extreme disintegration of the joint.

III. The (*primary*) *hypertrophic osteoarthropathy* (osteoarthritis hypertrophicans or deformans) is usually easily recognizable. Though

most often met with in advanced life, the same, or a similar, malady may occur in youth, especially after slight trauma. One joint is chiefly affected, or several joints (usually only a few) may be involved. This monoarticular or oligoarticular distribution is in marked contrast with the more general polyarticular distribution of groups IV and V. The large proximal joints of the extremities are most often involved (hips, shoulders, knees). There is an absence of the steady progression characteristic of group V. Both sexes are affected, males predominatingly. The general health may be but little disturbed. The disease does not lead to true ankylosis, though the joint movements may be somewhat limited through interlocking of exostoses. On palpation, lipping of the bone at the edge of the cartilage may be sometimes made out. Free bodies are common. In radiograms the joint-slits are often well preserved, though the cartilage may be eroded, accounting for the grating which may be palpable on movement of the joints. A history of trauma is common in these cases. The disease is often asymmetrical. Among the monoarticular forms, the so-called malum coxæ senilis is included. One of the spinal arthropathies (spondylitis deformans) appears to belong in this group.

IV. In considering the possibility of a *chronic arthropathy secondary to some infectious process,* it is well to think first of the arthropathies due to tuberculosis, lues, lepra, etc. Here the white swelling (*tumor albus*) of Wiseman, a suppurating fistula, the anamnesis, the presence or absence of lesions elsewhere in the body due to the primary disease, the study of X-ray plates (destructive processes in tuberculosis; subperiosteal swellings, regular or irregular in outline, in lues), the Wassermann reaction, and the tuberculin tests may help to clear up the diagnosis. After lues and tuberculosis have been excluded, the anamnesis may be gone into with reference to a preceding acute infection, either of the joints or other parts of the body. In many cases recorded as "chronic rheumatic arthritis" following acute articular rheumatism, the authors were in reality not dealing with a chronic arthritis following this affection at all, but with one following some one of the various other forms of acute infectious arthritis. Cultures from the blood, from the joint-fluid, or from a regional lymph-gland, complement-deviation tests, tests for bacteriolysins, agglutinins, etc., may occasionally be of help. This study may be followed by a systematic physical examination in which the various possible primary foci of infection, prostate and urethra in the male; Bartholin's glands, urethra, and cervix in the female; nose and paranasal sinuses; pyorrhea alveolaris, abscesses at the roots of the teeth (X-ray), chronic tonsillar infection (palatine or pharyngeal), and chronic otitis media, should be sought for. If the case be seen in the latter stages, a marked asymmetry of the joints affected, an absence of steady progression, or the complete ankylosis of single joints, may speak for this rather than the succeeding groups.

V. If the case does not belong to one of the first four groups it is most important from the standpoint of prognosis to decide whether or not it

belongs to group V, that of the so-called *primary chronic (progressive) polyarthritis.*

Clinically, this may appear as either one of two subvarieties. In both of these, the involvement is outspokenly polyarticular, the small distal joints usually being involved first. Later, the knees and elbows may become involved; the hips and shoulders frequently escape. These small joints become involved symmetrically. The jaw joint and the sternoclavicular joint are not infrequently affected, but usually asymmetrically.

In one subvariety (*A*) the disease may begin either insidiously or with an acute, or subacute, stage, with fever; in both forms of onset a striking feature is the periarticular swelling. Most of the small joints in the distal parts of all four extremities may become affected in serial sequence. The subvariety *A* is sometimes called the *exudative type* and corresponds to the "chronic infectious arthritis" (in part) of Goldthwaite.

In the second subvariety (*B*), most often met with in women near the menopause, the onset may be very insidious. The patients complain of formication, of chilly feelings, and of slight stiffness of the metacarpophalangeal and interphalangeal joints (except those of the thumb). Muscular atrophy quickly appears, especially of the interossei. Contractures gradually develop. The disease spreads to a large number of the more distal joints in all four extremities. The fingers become deflected ulnarward. On X-ray examination the joint-slits are found to have disappeared, owing to atrophy of cartilage; the bones are softened, and may have undergone distortion or telescoping, and they are usually markedly atrophic—so-called "atrophic arthritis" of Goldthwaite.

The subvariety *A* can certainly be simulated by chronic gonorrheal polyarthritis; X-ray plates will not distinguish between them. In lues hereditaria tarda a similar arthropathy is sometimes seen, but it should not be difficult to exclude it.

The absence of endocardial and pericardial changes in "primary chronic progressive polyarthritis" is striking when contrasted with the findings in acute rheumatic fever, the acute pseudorheumatisms, and in the chronic infectious arthritides.

Subvariety *B* is often (some think always) an end-stage of a condition beginning as subvariety *A*. It is possible, too, that later group V will not be considered separately as a disease *sui generis*, but will be placed in group IV; *i.e.*, it may be that the clinical appearances described as V may follow upon a variety of infections. For the present, however, the weight of evidence seems to the author to favor the view that V is really an independent disease. Lewellys F. Barker (American Journal of the Medical Sciences, January, 1914).

* * *

Constipation, Treatment of.—The author presents the following outline for the treatment of constipation, based on a combination of the psychic method advocated by Dubois, and dietetic, hygienic, and medical measures: Treatment begins in the early hours of the morning. During the night the slow movement of the intestines has brought to the rectum all the waste products of food. This constitutes the first of a series of

stimuli to defecation. The act of waking itself constitutes the second stimulus. The patient is directed to concentrate his mind on the act; voluntary muscular movements are executed, such as stretching, deep breathing exercises, and certain gymnastics, *e.g.*, leg movements, trunk movements, and head and leg exercises by which the muscles of the abdominal walls are brought into play. According to the disposition and constitution of the patient, baths of various forms are advised, a cold plunge to the robust, the cold sponge or the cold sitz bath to others. The water should be at a temperature of 54° or 57° F., and the patient is directed to stay in five or ten minutes with a cold compress to the head, and to rub the abdomen with his hands. A glass of cold water, or in some cases a glass of warm water, is taken as soon as the patient comes out of a bath. This constitutes a fourth stimulus. Next comes a short walk in the open air, followed by breakfast. This should be hearty and consist of bread and butter, particularly of whole wheat or graham bread, orange or grapefruit, oatmeal or cereal of some kind, and eggs or chops. If the patient is a smoker who has felt the good effects of a cigarette, he is permitted to use it. Next, the patient should go to the toilet regularly one hour after the beginning of his breakfast. Thus there will have been offered to the intestines 6 successive invitations to act, any one of which would have been enough for a subject not constipated.

If it becomes necessary to resort to colonic irrigation, it is at this time it should be used. Vinegar enemata (water and vinegar in equal parts), soap enemata (5 drams of green soap dissolved in 6 ounces of water), salt solutions, glycerin in small doses (1 to 5 c.c.), or a glycerin suppository may be used; 400 or 500 c.c. of pure olive or cottonseed oil may be injected rectally under low pressure. Such enemata should not be used oftener than once a week.

Rectal faradization may be used, or in cases of feces impacted in the rectum removal may be brought about manually or by the Ebstein method.

During the morning hours, walking and horseback riding should be advised. Deep-breathing exercises while at business, with the drinking of plenty of water, 6 or 8 glasses daily, are useful. In the diet one must forbid all foods which delay intestinal activity and supply those that hasten it.

Cathartics should not be used oftener than necessary, and in decreasing doses. Cascara sagrada in the form of fluidextract taken alone, 5 to 30 drops before each meal, or at night with the syrup of orange peel, 1 dram of each, is efficacious. Dry extract of cascara sagrada with rhubarb will also be found useful:—

℞ Fluidextracti rhamni purshianæ, ℥iss.
Misturæ rhei et sodæ, ℥ij.

M. Sig.: One teaspoonful three times a day before meals.

Podophyllin in doses up to ¾ grain is useful. Castor oil stands halfway between those cathartics which can be used every day and those that cannot. The simple aloes, strychnine, and belladonna pills find many advocates. Saline cathartics, mineral waters, or small doses of calomel may also be used. J. P. Chapman (New York Medical Journal, March 7, 1914).

Dysentery, Treatment of.—A treatment originally advocated by Eichhorst, viz., an injection of 2 per cent. solution of salicylate of soda into the bowel, is strongly advised by the author. The dose in adults is: sodium salicylate, 13 Gm. (3¼ drams); water, 650 c.c. (1⅓ pints).

Calomel, 0.3 Gm. (5 grains), is first given. Barley water and boiled milk are ordered for the first day or so, with warm applications to the abdomen. After six hours the injection is given, with a small dose of Dover's powder. The injections are repeated if necessary on the second and fourth, or third and fifth days, etc. In chronic dysentery a 10 per cent. decoction of simaruba bark, 1 dram (4 Gm.) every three hours, is used. In children about 90 Gm. (3 ounces) of the salicylate injection should be used. The injections should be at body temperature. W. Lutsch (Münchener medizinische Wochenschrift, Band lxi, Seite 476, 1914).

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Dysmenorrhea, Treatment of.—The upright position, with the valveless vena cava, causes uterine congestion, which tends to become exaggerated when the abdominal muscles are lax, when costal breathing is employed, and by clothing, etc., that interferes with the action of the respiratory muscles. The author has corrected these conditions in many cases by the following method: All tight clothing having been removed, the woman is placed on her back, on a level surface, in the horizontal position. The knees are flexed and the arms placed at the sides to secure relaxation of the abdominal muscles. One hand is allowed to rest on the abdominal wall, without pressure, to serve as an indicator of the amount of movement. The woman is then directed to see how high she can raise the hand by lifting the abdominal wall; then to see how far the hand will be lowered by the voluntary contraction of the abdominal muscles, the importance of this contraction being especially emphasized. This exercise is repeated 10 times, night and morning, in a well-ventilated room, preferably while she is still in bed in her night-clothing. She is cautioned to avoid jerky movements and to strive for a smooth, rhythmic raising and lowering of the abdominal wall. The results have been that the pain has been lessened in many cases and wholly removed in a large number. C. D. Mosher (Journal of the American Medical Association, April 25, 1914).

* * *

Eye, Ethylhydrocupreine in Pneumococcus Infection of.—The author reports on 30 cases of ulcerative pneumococcus infection of the eye, disease of the lachrymal sac, and conjunctivitis treated with instillations of the hydrochloride of ethylhydrocupreine, a derivative of quinine, in 1 per cent. aqueous solutions, which were allowed to remain for about half a minute in the conjunctival sac. In the ulcers atropine was used, but no warm applications. Stronger solutions than 1 per cent. caused superficial necrosis of the conjunctiva, and 2 per cent. solutions in oil were insufficient. Subconjunctival injections of 1 per cent. solutions caused intense chemosis and 2 per cent. solutions necrosis. A 1 or 2 per cent. salve, applied 5 or 6 times, had the same effect as the solution. Ethylhydrocupreine rapidly and securely

sterilizes the conjunctival sac and overcomes serpiginous ulcers, with subsidence of hypopyon. In accordance with the experimental results of Morgenroth, the rapid and complete sterilization is due to disinfection, not immunization. The curative effect on pneumococcus infection of the human eye is specific, as follows from the disappearance of the pneumococci from the conjunctival sac, while it has no influence on staphylococci, diplobacilli, and actinomycosis. It is also a prophylactic, as may be inferred from the rapid disinfection of the conjunctival sac and the prevention of infection of artificial erosions of the cornea. H. Sattler (Klinische Monatsblätter für Augenheilkunde, Oct.-Nov., 1913; Ophthalmology, April, 1914).

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Fibrositis, Chronic.—Chronic fibrositis of the joints is most frequently met with in the knuckle and finger-joints of those engaged in hard manual labor, especially when associated with damp surroundings. Pads upon the finger-joints constitute a chronic form of localized fibrositis. They form excrescences, which are almost confined to the dorsal aspects of the interphalangeal joints of the proximal row, and are only very rarely seen upon the terminal joints of the fingers. They are usually present upon the fingers of both hands, and vary in size from that of a split pea to that of the half of a hazelnut. Sometimes they are quite painless, but more often pain of various degrees of severity is complained of, especially when the fingers are flexed or if the lumps are knocked. Patients suffering from these pads generally seek medical advice under the apprehension that they are the precursors or accompaniments of rheumatoid arthritis, or that they are due to chronic gout. There does not, however, appear to be any connection between these pads and either rheumatoid arthritis or gout. There is, however, an intimate connection between them and Dupuytren's contraction of the palmar fascia, and it is fairly common to see the two conditions together. A. P. Luff (Lancet, February 14, 1914).

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Furunculosis of the External Auditory Canal, Treatment of.—The main object of the author's treatment with alcohol is the constant sterilizing of the pus and canal wall, thus preventing reinfection. The technique is as follows: The canal is cleaned of cerumen, desquamation, discharge, foreign bodies, or polyps. A wick is now inserted into the canal, nearly to the drum membrane, completely filling the lumen. If there is no discharge, cotton is used. If there is a discharge, gauze wick is used. If the canal lumen is partly closed by one or more distinct "ripe" furuncles, these should first be incised and the pus evacuated. Any incision should be carefully made into the center of the furuncle, for, if this is not done, the pus does not escape and the patient is not relieved. In addition, there is danger of infecting a new area, and a perichondritis sometimes results from trauma to the cartilage. A probe point will often help to locate the center of a furuncle.

After being inserted snugly into the canal, the wick is saturated with alcohol, plain or with boric acid, and the patient is instructed to keep the wick wet by dropping alcohol upon it

at frequent intervals. The wick should be removed daily by the physician and a fresh one inserted. Whenever a pocket of pus can be located, it should be incised. After incision, the alcohol should be applied before the patient recovers from the anesthesia. The alcohol smarts on freshly cut or abraded surfaces with the first application, but gives very little discomfort at later applications.

Following this treatment some of the early mild cases become abortive without surgical incisions. If the pain is severe, and no pus can be definitely located, it is better to administer an internal sedative and wait for the boil to become "ripe," and the pus to localize, rather than to make incisions at random. The canal should be moistened with alcohol for a time after apparent cure to insure against an immediate return of infection. Oliver A. Lothrop (Boston Medical and Surgical Journal, October 30, 1913).

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Hay Fever, Etiology and Treatment of.—For two years the author has been observing ragweed because he finds that it is the only flowering plant which has a wind-borne pollen during the period between July 1st and September 15th. Goldenrod is dismissed as a causative factor because its pollen is not wind-borne. The ragweed pollen is distributed when the sun warms up the air held in its oily envelope, and its production is most prodigious. The author is convinced that it is constantly in the air of the country and city, and estimates that 1 Gm. contains 172,800,000 pollen grains. He has made extracts according to Dunbar's method and treated 12 cases with considerable success in giving relief from the symptoms. He is convinced from the manner of its production and its short duration that he was producing a refractory or inhibitory phase of hypersensibility.

There are three ways of meeting the autumnal hay fever: 1. The eradication of ragweed. 2. The removal of the patient from the ragweed environment. 3. The production of antihypersensibility. The first of these is more practical than is commonly realized; ragweed can be exterminated. The second method is available only to the favored few, while in the third a glimmer of hope for the many thus afflicted may be seen. H. L. Ulrich (Journal of the American Medical Association, April 18, 1914).

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Heat and Infant Mortality.—The action of heat as a direct cause in the summer mortality of infants has been greatly underestimated. In the future much more weight should be given to its influence. The lethal action of heat is a function not so much of the maximum and mean temperatures of the external air as of the indoor temperatures, which, in the late summer, may continue to be high in spite of remissions in temperature of the external air.

The action of dirty and stale milk in causing the death of infants has been given a significance which has overshadowed other factors of equal or greater importance. There is evidence to show that a certain proportion of infant deaths are due to specific infections, in the dissemination of which contact infection and flies doubtless play a part.

Future activities for the prevention of infant mortality must concentrate

themselves to a greater extent on the question of housing, especially the conditions productive of higher indoor temperatures, such as overcrowding, narrow streets, and the absense of through ventilation. Poor housing conditions can be partially neutralized by the proper care of babies in the summer. The general public should be educated as to the importance of high indoor temperatures in causing the death of infants, and especially as to measures which prevent babies from suffering from the heat.

Breast feeding must still be regarded as a most, if not the most, important preventive of the summer death of infants. J. W. Schereschewsky (Archives of Pediatrics, December, 1913).

* * *

Hemorrhage, Tincture of Iodine in Gastrointestinal.—The author finds tincture of iodine a valuable hemostatic in hemorrhage from gastric or intestinal ulcers. In one severe case of typhoid fever hemorrhage persisted in spite of the application of an icebag and the administration of gelatin, lead acetate, opium, ergotin, and strychnine. The condition being critical, the author as a last resort prescribed tincture of iodine, in small doses at short intervals. The diarrhea and hemorrhage soon ceased, and the patient recovered after taking the mixture for twelve days without a sign of iodism. Five similar cases treated in the same way showed equally satisfactory results. The diarrhea was rapidly checked in most cases. When it failed, the diarrhea was very likely due to a mixed infection. In one case of intestinal hemorrhage of unknown origin, but probably gouty, the bleeding was likewise promptly arrested. In 4 cases of hemorrhage from a gastric ulcer the author found the action of tincture of iodine rapid. It also relieves the abdominal tenderness in this condition, and probably assists in cleaning and cicatrizing the ulcer. Nottebaum (Deutsche medizinische Wochenschrift, December 4, 1913).

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Infant Feeding, Whey-modified Milk in.—A mixture of 20 per cent. cream, and full milk, of each; 140 c.c.; water, 700 c.c., and potassium chloride, 0.2 Gm., has the same percentage of salts and fats as human milk, but less protein and less sugar. If, however, dextrose and maltose are added, a mixture suitable for an infant under 3 months is obtained; or, if dextrose and maltose, 50 to 70 Gm., and nutrose or plasmon, 5 Gm., are added, a mixture suitable for an infant over 3 months of age is obtained. If flour is used it must be boiled with the sugar-casein preparation and water for fifteen minutes. If no flour is used the mixture is simply brought to the boiling point. This food was used by the author for institutional infants with uniformly good results, approaching closely to those in breast-fed infants. J. S. Leopold (Archives of Pediatrics, January, 1914).

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Nasal Catarrh, Acute and Chronic.—The treatment the author finds most useful in cutting short *acute coryza* is the following: 1. A single pill of morphine, ⅙ grain, made up with a little capsicum and oil of mint. A small dose of nitroglycerin also is advantageous. 2. In two hours 10 grains of acetylsalicylic acid. 3. A

hot bath. On the following morning, a purgative dose of magnesium sulphate is given to clear away the intestinal contents held back by the morphine.

The object of local treatment at this time is to cause a profuse secretion of watery mucus, to wash away the organisms immediately they show signs of their presence. Neither a nasal douche nor a spray should be employed, but an irritant antiseptic ointment will best fulfill the purpose, *e.g.*, one of the so-called "analgesic balsams," usually containing menthol, methyl salicylate, and oil of wintergreen in a lanoline base. A small portion of such an ointment is inserted well up into each nostril, where, if sniffed back, it gives rise to considerable smarting and secretion. It should be applied frequently despite the pain. A period of relief will follow and then the nose can be sprayed repeatedly with a sedative preparation, such as chloretone inhalant. Despite the pain caused by the menthol-salicylic preparation, no cocaine should be employed at all, as it paralyzes the ciliary epithelium and opens the way for fresh infection.

If the above treatment is completely carried out, it will materially shorten the duration of the local symptoms of an acute coryza, and will almost entirely prevent the feverish toxemic symptoms.

If an acute nasal catarrh does not subside in a few days, especially if there is slight discharge with persistence of feverishness at regular intervals, with headache occurring at about 10 A.M. and passing off later in the day, a few drops of menthol in alcohol should be added to almost boiling water and the steam inhaled.

In involvement of the antrum of Highmore, it is well to wash it out through a Lichtwitz trocar daily until the washings are clear. Cocaine (20 per cent.) is well rubbed into the inferior meatus at the junction with the inferior turbinal; then, with a gentle boring movement, the Lichtwitz trocar is passed through into the antral cavity. Through the cannula a saturated solution of boric acid should be syringed. This should be done daily, and will in nearly every case clear up the sinus. The other sinuses are well situated for drainage, with the exception of the sphenoidal sinus, for which catheterization is the best treatment.

If an acute catarrh of the frontal sinus does not clear up in a few days, the anterior end of the middle turbinal should be removed, and also, if necessary, the uncinate process, which is sometimes so large as to give the impression of a double middle turbinal. After this amputation, cocaine (20 per cent.) and epinephrin should be rubbed well into the region of the infundibulum; a frontal sinus catheter should then be passed, and with great gentleness an attempt made to wash out the frontal sinus.

In the treatment of *chronic nasal catarrh* it is absolutely essential to perfect the patient's general health. Many patients will be cured if they adopt a healthy, open-air life, with abstention from tobacco, alcohol, and sexual excesses. Calomel on alternate evenings, with magnesium sulphate in the morning, will relieve portal congestion. Turkish baths at the rate of one per week are very beneficial.

Local treatment, if there is copious

secretion, practically resolves itself into simple lavage; it must be persisted with. The following combination is efficient and inexpensive:—

℞ Powdered boric acid,
Sodium bicarbonate,
Sodium chloride, equal parts.
Add a little menthol.

The powder is well mixed and ground; before use, it is shaken well to mix the constituents, and one teaspoonful is added to a pint of tepid water. A ball syringe should be employed, but great gentleness is required; there is no danger of injecting into the sinuses if the head is bent a little forward, and rapid expirations are made through the mouth. On no account must a swallowing movement be made.

If there is a tendency to local dryness and crusting, with practically no liquid secretion, treatment is best carried out by means of an oily solution sprayed with an oil-atomizer. The following is a good formula:—

℞ Menthol, gr. v.
Camphor, gr. ij.
Oil of eucalyptus, ♏iij.
Oil of sweet almonds, to make ℥j.

If there is considerable irritation, chloretone inhalant will be found very useful. If, on examination, so much obstruction is found that no shrinkage occurs with cocaine-epinephrin, then, before any treatment of the catarrhal condition can be successful, it will be necessary to insure a free respiratory passage by operation. William Wilson (Practitioner, October, 1913).

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Neosalvarsan, Experience with.— Of 56 patients treated with neosalvarsan by the author, 45 were given intravenous injections; 1 of these received two, 17 three, and 27 four injections, the treatment being given as far as possible every other day. The intramuscular method was tried in 11 cases, 1 patient receiving two and the others single injections.

In several cases of nodular syphilide the result was as gratifying as that usually obtained from the use of salvarsan. In the treatment of gummas of the skin and mucous membranes the effects of the remedy varied considerably. A deep ulcerative gumma of the leg had not entirely healed at the end of eight months, the patient having received 4 intravenous injections, although an extensive nodular syphilide upon another part of the body had healed promptly.

Mucous membrane lesions showed the same tendency to rapid disappearance as with salvarsan. One case of condylomata, however, did not clear up until the end of five weeks. There was no objective change in a case of leucoplakia.

A case of iridocyclitis cleared up in three weeks. A most gratifying result was obtained in a case of marginal keratitis occurring in an adult. Twenty-four hours after an intramuscular injection, the redness and photophobia had disappeared, and on the third day the patient was able to read. A case of hereditary interstitial keratitis not only failed to improve after three injections, but, at the end of one month, the second eye became involved.

The result of treatment in several cases of bone syphilis was most satisfactory. A patient with periostitis of the knee and ankle was given four intravenous injections. Although the knee had been stiff for six months, it

was perfectly normal on the day after the second injection. In a case of osteoperiostitis of the femur of three years' duration, however, no improvement resulted from four intravenous injections except a lessening of pain during the night.

In 2 cases of latent syphilis with persistent headaches there was only temporary improvement after treatment. One case of tabes showed improvement in gait and in general strength, though after the last injection he became sexually impotent.

The effect of neosalvarsan upon the Wassermann reaction was far from satisfactory. Of 36 cases treated by three to four intravenous injections, and followed serologically on an average over five months, 1 case became completely negative and remained so for four months; 2 became negative, and 2 almost negative, but later relapsed and became partially positive. A lessening in the strength of the reaction took place in 16 cases, while in 15 cases there was no change.

The intramuscular method was tried in 11 cases, the remedy being given as an emulsion with iodipin oil. The results in some cases were exceedingly good, and compared favorably with those obtained by repeated intravenous injections. They were, however, decidedly painful in all except 2 of the cases. The pain, induration, and lameness that followed more than counterbalanced the time and trouble of giving several injections by the intravenous method.

Conclusions: (1) neosalvarsan is an excellent symptomatic remedy for the treatment of syphilis; (2) its symptomatic action seems to be slightly weaker than that of salvarsan when used in corresponding amounts; (3) its serologic action seems to be considerably weaker than that of salvarsan; (4) it possesses a decided advantage over salvarsan in the greater ease and rapidity with which it can be prepared and injected intravenously; (5) intravenous injections of neosalvarsan are much less disturbing to the veins than injections of salvarsan. Howard Fox (American Journal of the Medical Sciences, January, 1914).

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Postpartum Sepsis, Treatment of. —Until recently many, and still no small number, curette the uterus in cases of postpartum sepsis. In any case of puerperal septicemia, the author maintains, the curette is contraindicated. The most common abuse of the curette in these cases is when a sapremia is present from retained material in the uterus. In many cases that which would otherwise have resulted in an uneventful recovery terminates, because of curettage, in a prolonged sickness and often in death. In all cases of postpartum or postabortal infection the type of infection must be determined, and in every type but one the uterus should be left alone.

The method substituted for curettage by the author is as follows: The patient being ready, the cervix is held by a guy rope and dilated. In all cases, except where the cervix is widely dilated, he first uses a dressing forceps, then a small dilator, and lastly a large dilator. In dilating he rotates the dilator slowly and tries to equalize the pressure on all parts. By thus "ironing" the cervix and using different-sized dilators, little or no injury is done to the cervical canal. After the uterus is dilated, strips of

gauze from 6 to 8 inches long are soaked in a 50 per cent. dilution of tincture of iodine. A strip of the iodized gauze is introduced into the uterus with the aid of a uterine sound. This is left about a minute, removed, and another strip of the iodized gauze introduced. As a rule, from 5 to 8 strips of gauze are used. When a drain is required, the last strip used is left in the uterus. This is removed, as a rule, in about eight hours.

In postpartum and postabortal cases where material is in the uterus, when it is known a sapremic condition is present even in the face of temperature, the author uses the iodized gauze as already described, with the exception that he introduces and retains from 2 to 5 strips of gauze at once. Then, the ends having been secured with a clamp, the gauze is twisted and gradually withdrawn. This process is repeated two to four times. (First the material in the uterus is removed as completely as possible with ring clamps; this is done without traumatizing the cavity of the uterus.) As a final step one strip of the iodized gauze is left in the uterus as a drain.

The 50 per cent. tincture of iodine has several advantages. It is readily absorbed into the tissues, whereas the official tincture is not. In cases of endometritis it does the work which the curette was originally supposed to do. In atonic conditions and subinvolution, before the process is finished the uterus contracts. If infectious organisms are present either in the uterus or the vaginal tract the iodine renders them harmless. It does not necrose the tissue and does not get into the tubes, as some authors have claimed. In 3 cases the author did not use the gauze, but injected the iodine with a syringe. Later, opening the abdomen, he failed to see any evidence of iodine in the tubes. In cases following labor and abortions, with retained material and a temperature of 104°, the method described was carried out and within eight hours the temperature fell to normal or 1° above normal.

In small uteri and cases of sterility where the husband was not at fault and the trouble seemed to be with an undersized uterus, a tight cervix, or an acute anteflexion, etc., the cervix was thoroughly dilated, iodized, and a glass stem pessary sewed in it after the method of Baldwin. The curette was not used. In misplaced uteri the endometrium was iodized and the misplacement corrected.

After experience in 208 cases the author has reached the conclusion that the 50 per cent. tincture of iodine, employed with the proper technique, is much to be preferred to the curette. Thurston Welton (Long Island Medical Journal, March, 1914).

* * *

Psoriasis, Treatment of.—It is well to remember, according to the author, that psoriasis patients are considerably demineralized. Consequently it is necessary to furnish salts of lime, chloride of sodium, and phosphates to the system.

℞ Calcium carbonate, gr. x (0.6 Gm.).
Calcium phosphate, gr. vij (0.5 Gm.).
Magnesium oxide,
Sodium chloride, of each, gr. j (0.06 Gm.).
For one cachet. Three to be taken daily.

In generalized psoriasis with large red patches indicating great irritability of the skin the local treatment should not be too active. The physi-

cian should content himself with prescribing anodyne ointments, zinc oxide, and starch baths. When irritation has more or less subsided, a more energetic treatment may be instituted. As a beginning, the following ointment may be applied:—

℞ Oil of cade,
Zinc oxide,
Talc powder,
Oil of sweet almonds, equal parts.

After a few days of this treatment, the reducing ointment of Gaucher may be prescribed:—

℞ Sulphur,
Camphor,
Salicylic acid, of each, gr. xv (1 Gm.).
Oil of cade, ℥iij (12 c.c.).
Zinc oxide, ℥v (20 Gm.).
Petrolatum, ℥j (30 Gm.).

The patient should apply this at bedtime, and wear drawers and an undershirt to be changed but once a week.

In the morning he should remove the ointment with soap and take a bath medicated as follows:—

℞ Oil of cade, ℥iv (120 c.c.).
Black soft soap, ℥j (30 Gm.).
Water, Oj (500 c.c.).
To be added to the bath.

He should remain in this bath as long as possible,—half or three-quarters of an hour,—then dry himself and proceed to his occupations. At night the ointment is to be reapplied.

After ten or twelve days of this treatment, the condition of the patient will be much improved; some of the patches will have faded out, and fresh eruption will have ceased.

At this period the doses for the baths can be increased if the patches are disseminated, or the strength of the ointment if they are localized. For the baths, chrysarobin may be added, provided the kidneys are in good condition.

℞ Oil of cade, ℥iv (120 c.c.).
Yolk of eggs, 2.
Extract of quillaja, ℥v (20 Gm.).
Chrysarobin, gr. xv (1 Gm.).
These baths are to be taken twice a week.

At this period Drew's ointment may also be applied, but only over small surfaces:—

℞ Salicylic acid, ℥iij (12 Gm.).
Chrysarobin,
Tar, of each, ℥v (20 Gm.).
Green soap,
Petrolatum, of each, ℥j (30 Gm.).
This ointment is to be put on at night.

At this point the patient is in a good way to recovery; only isolated patches are found on the scalp, elbows, etc. One bath a week is now sufficient. The local patches should be treated with traumaticine and chrysophanic acid contained in two separate bottles. The first consists of:—

℞ Gutta percha, ℥j (4 Gm.).
Chloroform, ℥ix (36 c.c.).

and the second of: —

℞ Chrysophanic acid, ℥j (4 Gm.).
Ether, ℥ix (36 c.c.).

After removing as much as possible the scales by dry rubbing with a towel, the area is washed with soap and dried, and the chrysophanic solution then applied to the patch of psoriasis with a brush, care being taken not to exceed the limits of the lesion. The traumaticine is then painted over the surface and a little beyond the limits of the patch, an occlusive dressing thus resulting. At the end of two or three days the patient repeats the procedure. Gougerot (Medical Press and Circular, January 7, 1914).

Puerperal Sepsis, Treatment of.—In the septicemic form of puerperal sepsis the general symptoms are chills, rapidly rising temperature and pulse, and physical depression out of proportion to the other symptoms. The local symptoms are foul discharge, which is sometimes absent, reddened and edematous labia, false membrane formation, and a subinvoluted and tender uterus. The pelvic exudate is usually late when it occurs. Leucocyte counts are usually higher than in any other form of fever in the puerperium. The first curative step is local disinfection of the genital canal, which should be done with the patient on a table. An anesthetic is not necessary. Careful cleansing of the parts followed by a 1:4000 mercuric chloride douche precedes and follows the cleansing of the uterine cavity.

If the temperature does not subside or should rise again, intrauterine douching alone is advised, the best solution being 2 drams (8 c.c.) of tincture of iodine; 8 ounces (240 c.c.) of 95 per cent. alcohol, and sterile water enough to make 2 quarts (liters). Once daily is sufficient, and the two-way catheter should have ample provision for return flow. The only contraindication to this treatment is phlebitis, but it is not always possible to tell when this exists and which is the lesser risk. If a sharp rise in temperature follows the disinfection, further local treatment should not be countenanced. An easily digested, largely liquid diet should be given in large quantities, and the author advises alcoholic stimulation as far as tolerated. Other stimulants are often needed for the heart, but a pulse under 110 does not ordinarily require stimulation. Enteroclysis is sometimes worth a trial. Serum treatment sometimes gives beneficial results when used early and in sufficient doses. The serum must be fresh; it will not stand long transportation. Sometimes a daily transfusion of normal human blood-serum from a healthy donor seems to have given benefit and is worth trying when antistreptococcic serum fails. The use of bacterins has been less satisfactory, and colloidal silver is of doubtful utility, though as an unction it is harmless. Every physician should be ready to give surgical treatment if needed. Continual septic symptoms plus an abdominal mass, palpable above the symphysis or Poupart's ligament, call for abdominal section. This abdominal mass is almost always a cornual abscess pointing toward the peritoneum. Without operation the patients are doomed; but with it and with proper drainage (which is the main factor in success) 90 per cent. can be saved. J. C. Hirst (Journal of the American Medical Association, June 13, 1914).

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Surgical Shock, Prophylaxis of.—The author recommends Crile's method of anoci association as a means of preventing the inconveniences and dangers of surgical shock. The dangers of the quinine and urea hydrochloride anesthesia are, in the light of his experience, purely imaginary. Securing early bowel movements for preventing gas pains, which he suggested as an important step in the method, was found by him of value in a long series of cases. He regularly begins the administration of calomel in powder, usually combined with cerium oxalate, 1 grain of

the latter to ½ grain of calomel, from twenty-four to thirty-six hours after the operation, and repeats the dose every hour until 6 have been taken. From four to six hours after the last dose, or sooner if indicated, a purgative enema is given, which generally inaugurates active peristalsis. A few days or hours saved the patient seems to him to justify this routine, and even render it highly desirable. A. B. Cooke (Journal of the American Medical Association, June 6, 1914).

* * *

Syphilis, A New Sign of.—The author has found one of the earliest signs of constitutional syphilis to be a diminution in the bone conduction of sound, coexisting with otherwise normal hearing. An apparently healthy man, with normal hearing but impaired bone conduction, should be suspected of being syphilitic. A tuning fork is struck and placed on the patient's mastoid process. When he no longer hears it, the fork is placed upon the physician's mastoid region. If the fork is still audible to the physician, the test is positive, provided the patient's hearing was otherwise acute. This reaction, which is apparently due to increased intracranial pressure, disappears for a few days after lumbar puncture. It is positive, besides syphilis, in brain tumors, hydrocephalus, epilepsy, and tetany. Beck (Münchener medizinische Wochenschrift, Nu. 50, 1913).

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Syphilis of the Eye, Salvarsan and Neosalvarsan in the Treatment of.—The 50 cases reported on by the authors include 1 case of chancre of the eyelid, 10 of interstitial keratitis, 20 of uveitis, 7 of muscle paralysis, 4 of optic neuritis, and 7 of optic atrophy. The Wassermann reaction was positive in 45 cases at the time of treatment; 3 had a negative reaction, and in 2 no reaction was recorded. Of the 10 cases of interstitial keratitis, 6 were heredosyphilitic, and 4 were acquired. In 2 patients the keratitis was complicated with dacryocystitis. All received mercury (usually in the form of inunctions) and iodide. Six patients received salvarsan and 4 neosalvarsan. The immediate effects in these cases, as in other ocular conditions, were good. There was prompt relief of pain, photophobia, lachrymation, and congestion. A good final result was obtained in all cases from two weeks to three months.

Interstitial keratitis is the most resistent lesion of the eye to antisyphilitic treatment. The clearing of the cornea is slow, but, as a rule, definite after each injection. This form of keratitis should be treated with repeated injections at rather short intervals. In the 2 cases complicated with dacryocystitis improvement in the dacryocystitis was most notable. Frequently but slight improvement follows each succeeding injection.

In acute syphilitic inflammations of the uveal tract the results are astonishing. This group included 7 cases of papular iritis, 6 of acute iritis, and 7 of general uveitis. The immediate relief from pain in these conditions was most gratifying, and what must be regarded as a good result was accomplished within two weeks in every case.

In 7 patients with optic atrophy no improvement in the nerve was noted; nor was it to be expected. In 10 cases associated with tabes the pains were relieved and the gait and station

somewhat improved. A. A. Uhle and W. H. Mackinney (Ophthalmic Record, February, 1914).

* * *

Threshold Levulose Test of Hepatic Function.—The author calls attention to the fact that a good measure of liver functioning is afforded by the alimentary levulosuria induced by graded doses of levulose taken on an empty stomach in 300 c.c. of milk. The urine is collected every two hours after, for six hours. According as the case looks suspicious, the author gives 50, 75, or 100 Gm. of the levulose, increasing or lowering the amount by 25 Gm. after a two- or three- day interval until the limit of tolerance is reached. The tolerance for levulose is reduced in proportion to the injury of the parenchyma of the liver. The threshold response is thus a reliable index of the existence and severity of pathologic changes in the liver. The urine is tested for levulose by the Seliwanoff method, *i.e.*, by the addition to the urine of equal parts of 25 per cent. hydrochloric acid and a few crystals of resorcinol, the urine having first been shaken up with animal charcoal to decolorize it. The test is positive when, on brief boiling, a bright-red precipitate is thrown down which dissolves in alcohol, giving it a dark-red tint. The findings in about 105 cases of various liver affections show that the tolerance is materially reduced when the common bile duct is obstructed with a gall-stone and in cases of catarrhal jaundice; alimentary levulose follows ingestion of even 50 Gm. levulose. With neoplasms, enough functionally capable cells are generally left somewhere in the liver, so that the tolerance for levulose is not materially reduced. The findings often throw light on the diagnosis and prognosis, and the simplicity and ease of the test, and the fact that it may reveal pathologic conditions in the liver long after the morbid cause has been apparently eliminated, render the method very valuable. Hohlweg (Münchener medizinische Wochenschrift, October 14, 1913).

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Trigger-finger, Treatment of.—In this condition the patient closes the fingers over any medium-sized object, and, on releasing it, finds that the little finger or one of the others refuses to open. He uses his other hand to raise the finger, when it suddenly jumps up with a snap and sometimes a little pain.

This has been considered as due to a congested point somewhere along the flexor tendon where it catches under a restricting bridge of fascia covering the tendon sheath. The author has been able to locate this bridge exactly under the extreme flexure crease of the palm.

In treating a recently seen case, he painted the part with iodine, inserted a fine bistoury in the flexure crease, and, pressing the point down to the tendon, drew it along for ½ inch. Relief was instantaneous and final. A small pad of boric gauze made pressure for two days and the trouble was cured.

The tendon is easily located by thumb pressure at the crease, and is not covered by nerve or vessel. Cutting the tendon fibers lengthwise (if one wishes to cut deeply, which is not necessary) would in no wise damage the tendon.

The trouble is not a rheumatic

tumefaction of the tendon, but a crumpling of it, very much as a tape might crinkle when slack above a slot and refuse to pull back easily. Robert Abbe (Medical Record, March 7, 1914).

* * *

Tuberculosis, Urochromogen Test in.—The authors give their experience with the Weisz urochromogen reaction in the urine as a prognostic sign in tuberculosis, covering over 113 patients. The test is as follows: Into each of 2 small test-tubes is put 1 c.c. of urine, and 2 c.c. of distilled water are added; to one tube, which is to be tested for urochromogen, 3 drops of 1 : 1000 solution of potassium permanganate are then added. The appearance of the faintest yellow color shows the presence of urochromogen and is easily detected by comparing with the control-tube, to which no potassium permanganate is added. The test is read positive, however, only when the solution stays clear. The presence of a urochromogen reaction in the urine of a patient sick with pulmonary tuberculosis is for the time being of unfavorable prognostic import. Persistent presence of the reaction in the urine in spite of proper treatment probably means a hopeless prognosis. Its absence is generally, though not invariably (regardless of how sick the patient seems), of good prognostic import. Its prompt and continued disappearance soon after treatment is instituted, in a patient who showed it before treatment, is, so far as the authors' experience goes, a favorable prognostic sign, though it will take several years' observation of these particular patients to determine the point conclusively. The reaction is not an invariable guide to prognosis, but in the majority of cases is of much value. J. Metzger and H. S. Watson (Journal of the American Medical Association, June 13, 1914).

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Tuberculous Rheumatism.—Tuberculous rheumatism was first described by Poncet, of Lyons, and other French physicians. It is most rare, however, to meet with a multiple arthritis of the smaller joints in the hands, fingers, wrists, and ankles in the course of tuberculosis. The subject of the author's paper was a young lady aged 19 of healthy parents. At the age of 13 she developed tuberculous glands in the left side of the neck, these gradually spreading down to the clavicle, into the submaxillary regions, and to the right side. Her general health became seriously affected. Nothing seemed to check the infection. Five years after the onset the glands in the original focus showed signs of breaking down. It was found impossible to remove any glands, so firmly were they fixed to everything in the neck. A month after the operation the patient developed a painless, rapid effusion into the right wrist-joint, followed in a week by a similar condition in the left wrist, and followed again by swelling of all the metacarpophalangeal joints of both hands. There was very little pain, but the temperature was high, 102° F. at night and 99° in the morning for ten days. Salicylate of sodium had no effect. The right wrist was aspirated and half an ounce of fluid removed. No tubercle bacilli could be demonstrated in it, but upon injection of the fluid into a guinea-pig the latter developed tuberculosis in four weeks and showed a pro-

gressive tuberculosis extending to all the organs. Cultures from the spleen on Dorset's egg medium yielded a growth corresponding to bovine tuberculosis. A rabbit also developed a tuberculosis, although not of so progressive and severe type as the guinea-pig.

It was clear that one was dealing with a primary infection of the neck glands with the bovine bacillus, probably conveyed through milk and absorbed from the tonsils and pharynx. The secondary arthritic infection was evidently through the blood-stream. The von Pirquet reaction was most violent. There was no affection of the lungs or pleuræ.

Six weeks after the onset of joint symptoms the skin of the legs and feet became red, swollen, and brawny, and numerous bullæ appeared, which soon ruptured, discharging greenish pus. Some of these appeared on the arms; after healing, a dark-brown stain was left on the skin.

On the subsidence of the acute symptoms the author commenced a course of tuberculin T. R. (human) in very small doses, beginning with 0.0001 mg. The injections were given weekly in increasing strengths to a maximum dose of 0.01 mg. The glands subsided to half their previous size, and the joints became smaller and more movable and painless.

Both this and two other similar cases of the author's were secondary to a primary tuberculous focus in the neck glands, which is, in his opinion, almost always caused by the bovine bacillus. He can find no record of tuberculous rheumatism occurring in the course of pulmonary tuberculosis, which is most frequently the result of infection by the human bacillus. It would seem, therefore, that the bovine bacillus is much more likely to find its way into joints, and also into the blood-stream, than the human bacillus, which is generally limited in its action to the lungs, larynx, and intestines. Nathan Raw (Lancet, January 3, 1914).

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Typhoid Cholecystitis.—Gall-bladder inflammation, in the absence of lithiasis, may produce the same symptoms and signs as occur in cholelithiasis. Thus in typhoid cholecystitis there may be no history of typhoid fever, no record of any exposure to infection, and yet serious illness result. In many of these cases the Widal reaction may be negative, and the course of the illness can only be cleared up by operation and a bacteriologic examination. The symptoms in typhoid cholecystitis do not always refer to the gall-bladder. The chief symptoms are a feeling of malaise and sickness, with a slight evening rise of temperature (99.5° to 101° F.) and occasional attacks of pain accompanied by rigidity of the abdominal muscles, not always localized to any special area. These attacks, if severe, occur regularly every third or fourth day, are accompanied by vomiting and fever, and are followed as the temperature increase subsides by copious night-sweats. If during the attack, or after the acute pain has passed away, muscular rigidity is not pronounced, the gall-bladder, sensitive to touch and more or less distended, can be palpated. A. E. Morison (British Medical Journal, December 20, 1913).

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Typhoid Fever, Bleeding in.—Many writers have remarked how

often typhoid patients seem to improve after moderate hemorrhages, and if it were not for the dangers of the bleeding becoming uncontrollable or being a precursor of perforation, probably one would be pleased rather than otherwise with the least temporary benefit which so often accrues.

The author's 12 charts show how the bleeding was followed by a more or less marked fall, both in temperature and pulse rate. An improvement in the general condition was also often noted. The improvement in temperature and pulse curves, while often transient, in some cases lasted for days and even ushered in convalescence.

There is no doubt but that hemorrhage produces a profound effect upon the whole bodily economy. Thus it has been shown to bring about an increase in the flow of urine and increase greatly the intake of oxygen, with proportionate raising of tissue-oxidation. It shortens the coagulation time of the blood more than does any other single agent. Roux and Vaillard showed that it produced a rapid increase in the antibodies contained in the blood, and Dreyer and Schroeder demonstrated that it increases the specific antibodies in typhoid and paratyphoid, both in experimental animals and in man. Whitehead fully confirmed this two years ago in a study of typhoid complicated by hemorrhage, in which the agglutinating power of the blood was found enormously raised by the bleeding. Further, in toxic conditions, such as uremia and other less-defined states, where there is high blood-pressure, bleeding appears to in some way lessen the toxemia, and possibly in typhoid it may have some similar effect.

Whitehead suggested that the good effects of hemorrhage in typhoid fever might be attained and the evil ones (associated with intestinal hemorrhage) avoided by the timely use of venesection in those cases which are not doing well on account of severe infection and toxemia. With this suggestion the author concurs. But one case where this was done is shown in his series, but the sequence of the venesection was there most marked. If the removal of blood by venesection be a moderate one, say of 6 to 14 ounces, it can do no harm and may possibly be productive of great good. R. D. Rudolph (American Journal of the Medical Sciences, January, 1914).

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Vioform in Affections of the Cornea and Sclera.—The author reports on his experiences with vioform. He finds it a good non-irritant, antiseptic wound powder. It may be applied as a 2 or 4 per cent. ointment with petrolatum base, or in the strength of 1 to 2 per cent. in sterile oil. It is useful in all varieties of ulcers of the cornea, with loss of substance, and injuries of the cornea and sclera, including the perforating. Through its astringent and antiseptic properties it promotes regeneration of the corneal tissue. The earlier it is applied, the greater is its effect in preventing or inhibiting infection. A. Dutoit (Archiv für Augenheilkunde; Ophthalmology, April, 1914).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

1. Internally: Equal parts of precipitated sulphur and milk-sugar; patient to swallow several times a day as much as is held on tip of a penknife. 2. Externally: Paint at night with a mixture of 10 parts of sulphur, 25 parts of alcohol, and 5 parts of glycerin. 3. Regulate bowels. 4. Meat, eggs, cheese, and sugar to be avoided. 5. Later, a ten- to fourteen- day course of Röntgen-ray exposures, one-third or one-fourth erythem doses being applied at 6 or 8 sittings, to a total of one and a half erythem doses. 6. Four or five weeks after this course, application of mercury quartz lamp for twenty or twenty-five minutes. The skin is to be carefully protected for eight or ten days and then gone over with the comedo extractor, any red spots left being treated with sulphur. *Kromayer.* 357

Acne Keloid. TREATMENT. In early cases small, isolated nodules may be excised; they do not recur if the incision is free of the circumscribed sclerotic mass constituting the nodule. *Adamson.* 357

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Alopecia Areata. TREATMENT. (1) The B. P. unguentum hydrargyri iodidi rubri (diluted from 4 to 2 per cent.); (2) the unguentum hydrargyri oxidi rubri, with acetum cantharidis, ʒj to ʒj, and (3) equal parts of sodium chloride and petrolatum found seviceable in this condition. Pure phenol often gave good results. Causes of peripheral nervous irritation, such as carious teeth, errors of refraction, or aural defects, to be investigated. In severe cases pilocarpine nitrate, injected into the scalp every week or fortnight in doses of 1/10 to 1/6 grain, is sometimes beneficial. *Dore.* 358

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

In amenorrhea, relative or absolute, ovarian extract considered best remedy by author. *Bandler.* 91

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Angina Pectoris. TREATMENT. Concussion at level of seventh cervical vertebræ, together with hypodermic injection of 1/10 grain (0.006 Gm.) of pilocarpine, to increase vagus tone, gives relief more promptly than does morphine. *Jarvis.* 160

Ankylostomiasis. TREATMENT. Betanaphthol in 30-grain (2 Gm.) doses given the first thing every morning is likely to prove more effectual than eucalyptus or thymol. Starvation of patient during such treatment is unnecessary; in bad cases it may be harmful. *Keith.* 165

Arthritis, Chronic. TREATMENT. Injections of phenol-camphor used with benefit. Must be made only into joint, never into spongy bone. Formula: Phenol, 30; camphor, 10; alcohol, 30. Only 0.5 or 0.25 c.c. is injected at one point, except in streptococcic processes, where 2 c.c. are necessary. *Pohl.* 235

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchitis, Acute. TREATMENT. Inhalations of recently prepared tincture of iodine from wide-mouthed bottles found to cure bronchial catarrhs in four days. Inspirations —from 4 to 8 or more at each sitting—to be more or less deep according to severity of case. Inhalations to be repeated 5 or 7 times a day. If much mucus, expectoration to be assisted by usual remedies. In children iodine tincture may be dropped on pieces of cotton to be laid on pillow (over oilcloth) while patient sleeping. *Torri.* 303

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing, exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the

temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* Page 55

Burns. TREATMENT. (1) Hypodermic injection of morphine and atropine. (2) Immerse burned area in, or cover with light cloth moistened with, cold water to which has been added 1 teaspoonful of sodium bicarbonate or chloride per quart; continue until morphine effect manifest. (3) Spray or mop burn and surrounding surface with hydrogen dioxide, mop with dry gauze, apply gauze strips dipped in 2 per cent. picric acid solution in dilute alcohol, and cover with thin layer of cotton and adhesive strips or bandage. Allow dressing to remain till soiled, then reapply. (4) About third day, open blisters and mop away contents. (5) Where sloughing: Remove dead tissue as it loosens, cleanse surface with dioxide, dry, mop with picric solution, put on strips of rubber tissue previously kept in 1:1000 mercury bichloride solution, and cover with picric acid compress and cotton. *Plain.* 299

Cancer. DIAGNOSIS. Marked diminution of the area of cardiac dullness in the recumbent posture, as determined by percussion, found in 87 per cent. of 111 cancerous cases and only 16 per cent. of 107 noncancerous cases. This sign may be present in cancerous cases that show no wasting. When the sign is present, diagnosis of carcinoma should be rejected only after careful consideration. In some cases the sign has appeared early enough to enable successful resection to be carried out. *Gordon.* 234

Cancer, Gastric. DIAGNOSIS. Positive or negative diagnosis made by serial röntgenography in 616 cases. Of 97 cases operated on, diagnosis found absolutely correct in 94. Gastric cancer at any stage, or indurated gastric ulcer, can be detected by this method as accurately as renal calculi or bone fractures. *Cole.* 301

Cellulitis. TREATMENT. Packing infected arm from fingers to shoulders in hot mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection promptly. *Freese.* 304

Colles's Fracture. TREATMENT. In reduction soon after the accident, without anesthesia, the most satisfactory method is a sudden, sharp jerk of the wrist administered by clasping one's fingers under the upper fragment, making pressure with the thumbs on the dorsum of the lower fragment, and abruptly pronating the hands. *Allen.* 419

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Corneal Ulcer. TREATMENT. Bathing part with 1 per cent. ethyl hydrocupreine solution for one-half minute every hour, six hours first day and twelve on next, found rapidly effectual in a case of ulcus serpens with hypopyon from chronic dacryocystitis. Sac expressed and conjunctiva cleansed with boric acid before each treatment with ethyl hydrocupreine, which was dropped on the ulcer. Practically specific against pneumococcic infections. *Wiener.* 168

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solution. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delirium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* 110

Dengue. TREATMENT. Three out of 7 cases were rapidly improved by administration of 30 drops of a 1:1000 solution of epinephrin by the mouth. Epinephrin is likely to prove useful in shortening convalescence in this disease and in mitigating the grave cases. *Khoury.* 329

Diabetes Insipidus. TREATMENT. Case in which injections of pituitrin caused marked, though but temporary, inprovement. *Farini.* 277

Diabetes Mellitus. DIAGNOSIS. Frommer's test recommended for detection of small amounts of acetone. Treat about 10 c.c. of urine with 1 Gm. of sodium hydroxide in substance and without waiting for it to dissolve; add 10 or 12 drops of a 10 per cent. solution of salicylaldehyde in absolute alcohol. Heat to 70° C. In the presence of acetone, marked purple-red color develops at zone of contact with alkali. This test indicates presence of 0.000001 Gm. of acetone. Urine must be diluted so that its specific gravity is about 1.01. *Muhlberg.* 232

TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.*, of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often

causing glycosuria to disappear. *Cornwall.* Page 110

Dry vegetable diet recommended for cases in a state of acidosis. Patient to take daily 10 ounces (300 Gm.) of dried legumins (peas, beans, lentils), 5 ounces (150 Gm.) of butter, 3 to 6 eggs, and 3 to 6 aleuronat or gluten rolls. Green legumins may also be given. Soy beans may be used. This diet to be followed at least 3 days at a time. The starch it contains is better utilized than that of other foods, glycosuria often being not higher than under a diet poor in carbohydrates. The diet also combats nitrogenous loss; somnolence and anorexia, where present, often disappear, and diaceturia diminishes. *Labbé.* 300

Diphtheria. TREATMENT. Iodine ointment used locally in 30 cases. With 2 cotton pledgets secretions and false membrane were first removed and the surface dried, and a third pledget, smeared with the ointment, was then rubbed on the affected surface and surrounding area. This was done every 3 hours, or in severe cases every 2 hours, until improvement occurred. Many cases cleared up within a few hours, becoming free of false membrane on the second or third day. *Thomas.* 364

Dysentery, Amebic. TREATMENT. Use of quinine advised as an adjuvant to ipecac in resistant cases of this affection. Successful results were thus obtained in cases that failed to react favorably to emetine. *Brooke.* 417

Dysentery, Bacillary. TREATMENT. In acute form: (1) Rest and warm covering; (2) only small amounts of food at a time; (3) calomel at the outset; (4) acid drinks; (5) enemata of saline or soda solution or of methylene blue. In chronic form: (1) Rest; (2) enemata of 1:500 or 1:1000 silver nitrate, 0.25 to 0.5 per cent. tannic acid, 1:500 or 1:1000 thymol, 1 to 2 per cent. resorcinol or creolin, or enemata of gum arabic mixed with bismuth subgallate or iodoform; (3) phenyl salicylate, tannigen, ichthyol, or calomel internally; (4) serum treatment, 10 c.c. in mild cases, 10 c.c. twice at six- to ten- hour interval in medium cases, and 40 to 60 c.c. in severe cases, not exceeding 20 c.c. at a time when serum used daily; (5) appendicostomy or cecostomy with irrigation in severe cases. *Bassler.* 111

Dysmenorrhea. TREATMENT. Cocaine applied to tuberculum septi in nose and anterior portion of inferior turbinate on both sides, followed by application of trichloracetic acid over these spots, in 93 cases. Four applications made between periods. Cases with premenstrual headache, nausea, and colic at onset of flow—but without organic pelvic lesions—completely relieved. Of 81 cases sending subsequent reports, 48 had been cured and 14 improved. *Mayer.* 167

Atropine found very useful, except in cases with high blood-pressure, when pressure must be reduced and cause sought and removed. *Stolper.* 235

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* 11

In mild acute cases paint on lesions an aqueous solution of picric acid several times daily; in more severe cases apply wet dressings of the acid, held by facial mask. Prompt and gratifying results. In subacute and chronic types cure hastened by beginning treatment with two or three days' application of picric acid solution. *Wilcox.* 176

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Epilepsy. TREATMENT. Four patients with severe essential epilepsy treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic. Considerable benefit. Dose of fluid injected, 3 to 5 c.c. biweekly or weekly. Improvement striking both as to severity and frequency of attacks. In some, petit mal took place of grand mal. Greatest improvement noticed especially if injected fluid was taken from other patients during recurrent attacks, no matter how slight the latter. *Gordon.* 235

Epistaxis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin brought early relief in 5 cases. *Citelli.* 279

Epithelioma. TREATMENT. Concentrated sunlight, focused on growth with ordinary magnifying glass, found effectual. Useful where X-rays and radium not available. Invariably successful in obstinate recurrent ulcerative patches on face or nose. Focus sunlight on sore for ten or fifteen minutes at a sitting. If scab present, concentrate rays till burning is felt, then lengthen focus to cover wider area. Induce burning again every few minutes. Treat every day or two till scab easily removed, then apply a little cocaine and after three or four minutes apply rays so as almost to cauterize base of ulcer. Alternate with milder applications for fifteen minutes. Under milder treatments thereafter, at longer intervals, cure usually complete in three to six weeks. *Seelye.* 166

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

In facial erysipelas: Have beside bed bowl of boric acid solution in which ice is placed. Keeping cloths frequently moistened with the solution continuously on face effectually re-

lieves pain and burning. Where leg or arm involved: Wet dressings of boric acid or aluminum acetate. In migratory cases: Ichthyol may be applied or surfaces painted with picric acid solution. *Erdman.* Page 112

Pyramidon used in 20 cases with uniformly favorable results: Diaphoresis, antipyresis, sedation, fading of eruption, which ceases to spread, and improved general condition. Diuretic beverages also given. Locally, following ointment used: Phenolis, camphoræ pulveris, ana gr. xv (1 Gm.); adipis lanæ hydrosi, petrolati, ana ʒss (15 Gm.). *Satre.* 167

Discomfort and pain more rapidly relieved by picric acid solution than other agents, and edema disappears promptly. *Wilcox.* 176

Two facial cases treated by local applications of hepatic lipoid, rapid recovery following. *Tilmant.* 416

Erythema. TREATMENT. Epinephrin used in 3 cases of erythematous taches of the face ("red nose"). A 1:1000 solution was given internally in 5-minim (0.3 c.c.) doses in water 3 times daily half an hour before food, and the treatment continued during five to six months (with short intervals). The erythema almost entirely disappeared, and a year and a half after treatment it had not reappeared. No bad effect on the heart or blood-pressure was observed. *Rothmann.* 348

Felon. TREATMENT. Mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection in an unusually short time. *Freese.* 304

Fracture of External Malleolus. TREATMENT. Case of oblique fracture of fibula, involving malleolus, in which, great pain continuing after splinting, the malleolus was exposed by rectangular incision and, after detachment of external lateral ligament, entirely removed. The foot was splinted at a right angle to the leg. Pain ceased, and on the twelfth day the patient could stand on the foot without discomfort. Similar treatment recommended for all detached external malleoli. *Bland-Sutton.* 360

Fracture of Femoral Neck. TREATMENT. In adults the author recommends the addition of a side pull to the Buck extension. The side pull is exerted on the upper end of the thigh by means of a weight and pulley, the latter being placed opposite the crest of the ilium. It can be attached to the wall, a standard, or the side of the bed, and should be so adjusted that the pull is upward and outward at an angle of 45 degrees. The amount of weight at the foot of the bed should be sufficient to overcome the shortening, and the side weight about one-third of the foot weight. A well-padded splint of surgeon's felt, or sole leather, should be applied to the inner and under sides of the thigh, coming well up to the perineum, and fastened to the thigh by adhesive plaster encircling the limb. A band made of several layers of gauze or cheesecloth is convenient for the side pull. It should be fastened to the splint by adhesive plaster. By shortening the lower arm of this gauze the limb can be rotated inward, thus avoiding eversion. *Moore.* 361

Fracture, Ununited. TREATMENT. Osmic acid, 0.02 Gm. in 1 per cent. solution, injected directly into focus in a case of ununited fracture of fibia and fibula, rebellious for six months. Injection repeated 3 times in two weeks. Patient discharged two weeks later. Stimulating action of the acid on periosteum and marrow confirmed in rabbit experiments. *Segrè.* 307

Fractures about the Elbow. TREATMENT. These cases should be started on an internal right angular splint. At the second or third dressing, while the fragments are still plastic and when the swelling has subsided, the wrist should be slung from the neck, obtaining the most acute flexion possible without too much pain. The flexion is increased at subsequent dressings for two or three weeks, when it is decreased again until all dressings are abandoned at the end of four or five weeks. *Allen.* 419

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ʒiiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

Gastric Atony, Acute. TREATMENT. Continuous lavage of stomach through nose recommended. Cocainize nose and work soft oiled tube with 8 to 11 mm. lumen down into stomach. Attach longer tube and carry to receptacle. Amounts up to 5 liters thus drain away. Keep outlet of tube at level of bed to prevent aspiration of mucous membrane. *Grosser.* 305

Gastroenteritis, Infantile. TREATMENT. *B. lactis bulgaricus* in tablet form administered in 55 cases, varying in severity from moderate degrees of infection—6 stools a

day—to the most grave—20 or more. From 3 to 10 tablets a day were given to each infant, according to the gravity of the illness. Results: 43 gained in weight; 2 lost; 3 gained and later lost, and 7 showed no change. There were no deaths. The temperature came down to normal within one to three days, and in two or three days the stools became yellowish or brown, well formed, and free from curds, mucus, and blood. *Schwartz.* Page 364

General Paralysis. TREATMENT. Remissions may be prolonged by suitable doses of tuberculin (1/1000 to 1/5000 mg. of tuberculin residue). *Jackson.* 236

Glaucoma. TREATMENT. In non-inflammatory glaucoma, when operation is consented to, Elliot's sclerocorneal trephining is by far the safest procedure and the most productive of results. In 29 cases thus treated there were no serious complications at operation in any case. Seven eyes with absolute glaucoma were preserved that formerly would have been removed. In 7 other eyes which were sightly a small degree of vision was gained by the operation. In the remaining 15 the eyes gained considerably in vision and usefulness. *Reber.* 362

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Colloidal silicon injections used with benefit in a case of simple goiter. Trial of this measure is advised in both simple and exophthalmic goiter before operation is resorted to. *Suard.* 345

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Report of cases improved by administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided among twenty days in each month. *Gaultier.* 90

Next to operative treatment, where indicated, repose is important. The patients should be gotten out of their ordinary environment. A trip to an altitude of about 3600 feet often acts favorably, starting first at 1500 feet. The patient should be well nourished, on a carbohydrate-fat mixed diet. Galvanic stimulation of the neck is often useful; the anode being on the sternum and the cathode behind the angle of the jaw, a current of 1 or 2 milliampères should be slowly turned on for one to three minutes and then slowly turned off. *Bauer.* 411

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1) Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2) grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* 48

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made. *Wolff.* 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomentation applied for five or ten minutes twice, and

followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* Page 50

Hemoptysis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin nearly always brings relief in average cases. Where first injection fails, give a second, and later if necessary a third, the latter intramuscularly. *Citelli.* 279

Intravenous injections of 0.5 c.c. of pituitrin were followed almost at once by cessation of hemorrhage in 10 out of 12 cases. Where the hemorrhage recurred on succeeding days, the same prompt relief was obtained. *Rist.* 411

Hemorrhage, Cerebral. TREATMENT. Venesection used with good results and recommended in cases of apoplexy in full-blooded patients with blood-pressure of 200 mm. or more. Amount of blood let in author's cases, 12 to 48 ounces. Where vein at elbow not easily found in stout persons, there are usually varicose veins in legs which can be opened. *MacFarlane.* 121

Hernia. TREATMENT. Inversion of hernia recommended in patients who take anesthetic poorly and maintain strong expiratory efforts, forcing viscera into sac under pressure. Primary union and cure of hernia in each of author's 7 cases thus dealt with. *Haynes.* 170

Herpes Labialis. TREATMENT. Picric acid solution causes rapid drying of lesion and tends to prevent extension. *Wilcox.* 176

Hodgkin's Disease. TREATMENT. Benzene, 5 minims (0.3 c.c.) three times daily at first, then increased to 10 minims (0.6 c.c.), caused marked regression of enlarged nodes, beginning two weeks after treatment begun, in a case previously treated unsuccessfully with X-rays. The 10-minim dose was continued for six weeks. *Lawson and Thomas.* 173

Hyperchlorhydria. TREATMENT. Cream diet considered useful. (See Ulcer, Gastric.) *Nichols.* 169

Following measures recommended: (1) Magnesium oxide, combined with sodium sulphate and belladonna in small amount. (2) All food to be well cooked and most carefully minced. (3) Patient to take 2 or 3 meals at two-hour intervals in forenoon, but nothing after lunch until 7 P.M., when only porridge to be taken. (4) Fluid intake to be generally diminished and restricted to hours when stomach not filled with food. (5) In severe cases, or where gastroptosis: Rest in bed for two or three weeks. (6) Hot compresses twice daily for two hours; cold compresses at night. (7) If hyperacidity arises on basis of a catarrh: Rinse empty stomach in morning with 1:1000 salicylic acid or 1:500 silver nitrate solution. (8) Bowels to be carefully regulated. *Schmidt.* 302

Hyperthyroidism. TREATMENT. Injection into enlarged thyroid of 1 to 4 per cent. solutions of quinine and urea hydrochloride caused marked improvement in 3 cases. *Watson.* 265

Ileus. TREATMENT. Continuous lavage of stomach through nose recommended in duodenojejunal occlusion, postoperative bowel paralysis, ileus from adhesions, spasmodic contraction from peritonitic reflexes, and vicious circle after gastroenterostomy. (See Gastric Atony, Acute.) *Grosser.* 305

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Infections, Local. TREATMENT. Following summary of serviceable measures present: *A.* Inflammations with slight serum exudation, but with redness, heat, swelling, pain, and loss of function: 1. Rest. 2. Elevation. 3. Hot, wet dressing.—*B.* Where much serum exudation, but slight tendency to necrosis: 1. Incision. 2. Place gauze in wound saturated with Chlumsky's solution. (Camphor, 60 parts; phenol, 30; alcohol, 10.) 3. Wet dressing; keep wet. 4. Remove gauze in twenty-four hours. 5. Insert rubber drain. 6. Apply wet dressing.—*C.* Where marked necrosis: 1. Incision. 2. Drainage. 3. Wet dressing. 4. After inflammation receded, Durante's solution. (Iodine, 1 part; potassium iodide, 10; guaiacol, 5; glycerin, to make 100.) 5. Dry dressing. *Hoag.* 307

Insanity. TREATMENT. Recovery in manic-depressive insanity may be hastened by stimulation of leucocytosis by injection of 1 c.c. of terebene subcutaneously in the flank. *Jackson.* 236

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intertrigo. TREATMENT. Paint picric acid solution on surfaces and separate them with thin layers of absorbent cotton. In the more severely infected cases wet dressings of picric acid. Prompt results. *Wilcox.* 176

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valua-

ble for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* Page 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Iodine Poisoning. TREATMENT. Calcium lactate internally found useful in 2 cases of iodine poisoning from a course of potassium iodide. *Von den Velden.* 418

Lumbago. TREATMENT. Salicyl compounds or a 10- or 20- grain (0.6 or 1.2 Gm.) dose of quinine at onset of condition useful. Rochelle salts, ½ to 1 dram (2 to 4 Gm.) every hour or two until urine alkaline and bowels freely moved, also valuable. "Walking the lumbago off" may succeed if free perspiration accompanies the exercise. Turkish bath in early stage safer and more effective. Later: Rest, dry cups locally, deep massage, faradic current, and, if salicylates fail, iodine, in vegetable protein combination. *Henry.* 175

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Gold and potassium cyanide injected intravenously in 12 cases. Single dose, 0.01 to 0.05 Gm. Results good. Course of 12 to 14 injections followed by interval of two to three weeks, after which another treatment given. Even in severe cases, therapeutic results better than with tuberculin and other measures. *Poór.* 236

Mammary Abscess. PROPHYLAXIS. Threatened mammary abscess underwent absorption in 2 or 3 cases soon after administration of pituitary extract. *White.* 283

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation, in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Osteomalacia. TREATMENT. Case in which excellent results obtained from epinephrin, injected in doses of 8 minims (0.5 c.c.) of 1 : 1000 solution, daily, in 2 series of 9 injections each. Patient finally discharged cured. *V. Salis.* 278

Ozena. TREATMENT. Use of sugar recommended. For first week or two surgeon should carry out treatment himself, and precede sugar by removal of crusts from nose, softening them if necessary with hydrogen dioxide or sodium bicarbonate solution. Patient to use nasal syringe once daily. After crust removal, massage mucosa with cotton-tipped probe; then nostrils may be packed with ribbon gauze soaked in simple syrup, to be removed in twelve hours. Repeat this treatment on alternate days. After a fortnight patient can insufflate powdered sugar himself. *Harry.* 175

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Pericarditis, Adhesive. DIAGNOSIS. Retraction of the chest wall circumscribed along the left costal arch between the parasternal and anterior axillary lines, and with pulsation, is pathognomonic. To examine for retraction one should lay one hand on the lower part of the sternum and the other on the spine opposite; the patient then taking a deep breath, the chest is felt to grow narrower and a distinct systolic retraction perceived. Preference of edema for the upper part of the body, as well as the paradoxic engorgement of the neck veins during inspiration, are also characteristic. *Tornai.* 424

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Phlebitis, Chronic. TREATMENT. Local alternate hot and cold submersions and spray advised. Two tubs or pails are used, one containing cold water and the other water at 110° F. The affected limb is first submerged in the hot water for thirty seconds, then in the cold for fifteen seconds. This alternation is gone through 10 times, ending with the cold-water submersion. The part is then gently rubbed until the skin is dry and red, showing proper reaction. Gentle stroke massage in the direction of the venous flow is then to be carried out for ten minutes, the skin dusted with talcum powder, and an elastic support applied. The spray method (spraying with sponges of hot and cold water or a nozzle-spray attachment), applied for the same length of time, is useful to treat the upper parts that cannot be submerged. *Foster.* 424

Placenta Previa. TREATMENT. In marginal variety, inject 30 minims (2 c.c.) of

pituglandol and at once rupture membranes. In central variety, according to extent of dilatation, perform version or introduce metreurynter and give pituglandol. Metreurynter generally expelled spontaneously in one-half hour. Then perform version and give second dose of pituglandol. *Gall.*
Page 280

Pleurisy. TREATMENT. Autoserotherapy recommended in all cases of serofibrinous pleurisy in which pyemic infection is absent. A positive cure may be expected in over 80 per cent. of cases. In large effusions causing severe dyspnea and pain one should aspirate 10 to 200 c.c. of fluid and, before withdrawing the needle entirely, reinject 2 to 3 c.c. under the skin. Immediate relief from symptoms and a more rapid absorption of the exudate will follow. The injections should be repeated every other day until decided improvement takes place. *Pfender.* 417

Use of calcium lactate internally in pleurisy is indicated only when the effusion constantly recurs after puncture. *Von den Velden.* 418

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.*, daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Vaccine treatment advised. First give polyvalent stock vaccine of pneumococcus and streptococcus, of each, 30 million, as soon as possible. Make sputum smears and cultures, blood-cultures in early cases, lung puncture in late ones, and prepare autogenous vaccine. If no definite response in twenty-four to forty-eight hours, repeat or preferably give autogenous vaccine. If still no response in thirty-six or forty-eight hours, double the dose. If there is response, as shown by improved clinical symptoms and signs, increased well-being, etc., defer reinoculation three days, or until the first symptoms of retrogression in general condition or physical signs occur. Maintain the dosage or increase it every two or three days until the patient entirely well. Generally about three doses are necessary. Average mortality with vaccine treatment only 5 to 10 per cent. Convalescence shortened and danger of complications lessened. In severe cases also give 20 to 30 grains of sodium citrate every two or three hours. *Craig.* 238

Epinephrin, 8 minims (0.5 c.c.) of 1:1000 solution in 1 pint (500 c.c.) of saline solution subcutaneously, caused prompt improvement in a desperate case. *Lonhard.* 281

Camphor-injection treatment recommended. A 30 per cent. preparation of camphor in oil of sesame, sterilized in a boiling water bath, should be used. As soon after the initial chill as possible, 2½ fluidrams (10 c.c.) of the preparation per 100 pounds of body weight should be injected hypodermically every twelve hours except in bilateral pneumonia and in severe toxemia, when injections should be made every six to eight hours. The site of injection should be the outer thigh or abdomen. The injection should be made slowly and the oil gradually deposited below the subcutaneous fatty tissue and not into it. *Cruikshank.* 426

Poliomyelitis, Acute. DIAGNOSIS. Preparalytic symptom: A peculiar, twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to somewhat less than a minute. Usually affects part or whole of one or more limbs, face, or jaw, but sometimes whole body. Duration of spells short at first. Often accompanied by a cry similar to hydrocephalic, or by brief period of unconsciousness. *Colliver.* 177

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Low nitrogen diet found to have very favorable influence upon psoriasis eruption, especially when extensive. Severe cases improve under such a diet almost to the point of disappearance of the eruption. *Schamberg, Kolmer, Ringer, and Raiziss.* 178

Application of picric acid solution brings immediate and constant relief from itching. *Wilcox.* 176

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* 53

Puerperal Sepsis. TREATMENT. Fixation abscess recommended in this and other severe infectious states, including pneumonia, appendicitis, typhoid fever, etc., whenever condition seems to be taking a turn for the worse. Inject 2 c.c. of pure oil of turpentine under gluteal skin. When abscess forms, evacuate through small incision (do not drain) and apply Bier cups twice daily. Excellent results in 18 cases. *De Lostalot.* 168

Pyloric Spasm. TREATMENT. Atropine in a certain proportion of cases brings relief.

The author found that epinephrin hypodermically procures complete and lasting relief in most instances. In 2 cases the palpable pyloric tumor could be felt to melt away under its influence. Prolonged gastric lavage, using water at 105° F., also has a happy effect in relieving spasmodic stomach conditions. *Stockton.* Page 367

Pyorrhea Alveolaris. TREATMENT. Sensitized vaccine against streptococcus, staphylococcus, pneumococcus, and bacillus of Friedländer used in a number of cases. After 2 injections, mechanical and dental treatment added. After 4 or 5 injections, teeth clean and firm, and organisms gone. Three or four supplementary injections given. No recurrence in six months. *Bertrand and Valadier.* 304

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disappeared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* 55

Rachitis. TREATMENT. Pituitary extract given to 16 young children with rickets, and effects compared with controls. After a few weeks of pituitary, the children were able to stand and began to walk; fontanelles began to close and growth of teeth was considerably accelerated. Osseous tenderness gradually diminished, weight was gained, and musculature became firmer. *Weiss.* 218

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intramuscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* 91

Rheumatism, Acute. TREATMENT. Intravenous use of sodium salicylate resorted to in 12 cases, 130 injections in arm veins being given in all. A very fine, sharp needle should be used. The solution is made by dissolving 10 Gm. of C. P. crystalline sodium salicylate in 50 c.c. of distilled water freshly sterilized by boiling. Each cubic centimeter contains 3 grains (0.2 Gm.) of the salicylate. Usually the dose was 15 or 20 grains (1 or 1.25 Gm.) and injections were given at twelve- or eight- hour intervals over a period of three to six days. Occasionally, in robust men, 30 grains (2 Gm.) were given, and as much as 120 grains (8 Gm.) in the first twenty-four hours, without unpleasant effects. Relief of pain was prompter and more pronounced than from oral administration. The method is indicated in patients unable to retain the drug by mouth; those who show little or no response to the usual method; to start the treatment with a few intravenous injections where pain is intense, and in cases with threatening heart complications, or in severe rheumatic affections of the eye. *Conner.* 428

Ringworm. TREATMENT. Body ringworm more easily controlled by painting on picric acid solution than by usual antiseptic ointment. *Wilcox.* 176

Wash part with a strong solution of sodium bicarbonate, swab with a mixture of 1 part of ether to 2 parts of alcohol, dry, paint with a 2.5 per cent. tincture of iodine, and apply immediately an ethyl chloride spray until the skin gets china white. In twenty-four to forty-eight hours the patch of ringworm will have become quiescent. Next tiny spots should be looked for and similarly treated. In ringworm of the scalp 3 or 4 applications of iodine and spray are required, but on the face or smooth surfaces 1 application suffices. *Foley.* 429

Scarlet Fever. TREATMENT. Iodine ointment used locally in 19 cases (see Diphtheria). These cases were unusually free from local complications. *Thomas.* 364

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Scorbutus. TREATMENT. Calcium lactate, 45 grains (3 Gm.) a day, found a valuable measure. *Von den Velden.* 418

Skin-grafting. Following method of dressing skin-grafts just after their application described: Strips of gauze, 6 to 8 layers in thickness, are thoroughly impregnated and buttered with sterile 33⅓ per cent. bismuth paste (Beck's paste). These are laid over the grafts smoothly for 2 or more inches beyond the wound. No wrinkles or folds should remain. Over these is placed a layer of absorbent cotton, and the whole held firmly by a roller bandage. The first dressing should be done on the fifth day, great care being exercised in the removal of the primary dressing. A similar dressing is reapplied and subsequent dressings done every third or fourth day as required. At about the fifth dressing one can peel from each graft a thin film of dead cuticle, leaving a firm, pink, healthy graft in position. *Coerr.* 358

Spasmophilia in Children. TREATMENT. Combined treatment with phosphorized cod-liver oil and milk curds from which the whey had been removed by washing with water (thus removing all mineral salts) was employed in 12 cases. A cure was obtained in 9 cases within a week, twice at the end of the second, and once in the fourth week.

There was loss of weight, but this was soon made up on return to full milk diet. *Bernheim-Karrer.* Page 368

Syphilis. DIAGNOSIS. Luetin test valuable as diagnostic measure in tertiary and latent stages of syphilis, indicating a state of hypersensitiveness to spirochetal proteins induced by a period of cessation of introduction of these proteins previous to the test. Provocative injection of salvarsan, followed by both Wassermann and luetin tests, suggested to ascertain whether treatment has been curative in a given case: *Foster.* 179

TREATMENT. Epinephrin, 15 to 20 drops of 1:1000 solution in a little water by mouth, advised ten to fifteen minutes before injection of neosalvarsan, to prevent "nitritoid" symptoms, arising in some patients from the latter, *e.g.,* facial congestion, tingling in throat, nausea, and vomiting. *Galliot.* 212

Tonsillitis, Ulcerative. TREATMENT. After thoroughly washing surfaces and crypts, apply 10 per cent. silver nitrate solution over ulcerated surface and carry down into crypts as well. Then dust thymol iodide with powder blower over gland and throw it into diseased lacunæ. Where tonsils seat of recurring inflammation, but patient objects to removal, use electric cautery. Selecting 3 or 4 crypts at a time, apply 10 per cent. cocaine solution to interior of each with fine-pointed cotton applicator. When anesthesia sufficient, introduce curved electrode into each crypt and turn on sufficient current to produce a white heat before electrode removed. Patients thus treated are freed from further attacks. *Bishop.* 241

Tracheobronchial Glandular Enlargement. DIAGNOSIS. Percussion of thoracic vertebræ, especially those above level of inferior scapular angles, affords tonal changes of clinical value in this condition; these must always be correlated, however, with mural signs in the individual case. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect vertebral percussion sound less, and oftener produce dullness than hyperresonance. *Da Costa, Jr.* 180

Tuberculosis. TREATMENT. Garlic, 1 fluidram (4 c.c.) of the expressed juice or 2 drops of the essential oil three times a day, recommended in all forms of tuberculosis. Externally, poultices of crushed garlic bulbs, 1 part, with 3 parts of lard, or garlic ointment (50 per cent. of the juice in petrolatum) are to be applied.

Mercury biniodide, $\frac{1}{30}$ grain three times a day internally, and unguentum hydrargyri externally, give the best results next to garlic. In cases of severe toxemia, where more active elimination is necessary, the following treatments give best results: (1) Normal saline, 220 c.c., at 106° F.; also of value in hemorrhagic cases, intravenously. (2) Guaiacol, 32 drops in 220 c.c. of sterile water, at 106° F., intravenously. (3) Mixture of sodium salicylate, guaiacol, and glycerin, of each, 32 grains or drops in 220 c.c. of sterile water, at 106° F., intravenously. (4) A 2 per cent. aqueous solution of pure phenol (Bacelli's treatment), 1- to 5- c.c. doses hypodermically or by Murphy's drip in 10-c.c. doses; the kidneys must be watched. Cases of continued septic temperature, not improving from the above, should be treated surgically. For making the soil unfavorable for the tubercle bacillus, phosphorus, $\frac{1}{1000}$ grain t. i. d., and Fowler's solution, 1 drop t. i. d., give the best results. *McDuffie.* 431

Tuberculosis, Articular. TREATMENT. X-rays found useful in bone and joint tuberculosis. Aluminum or thick leather shield to be used. Treatment not to be employed in children less than 5 years old, and in older children epiphyses should preferably be avoided. Best effects noted in cases with sinuses and secondary infection. Part exposed from all sides to an erythema-producing dose; three weeks then allowed to elapse before repetition. Joints healing under the rays show but little limitation of motion. Abscesses with skin about to yield should not be rayed, owing to danger of necrosis. *V. Schede.* 165

Tuberculosis, Laryngeal. TREATMENT. Scarlet red, 10 per cent. in a mixture of equal parts of sesame oil and petrolatum, applied twice daily in cases with laryngeal lesions, whether ulcerative or not. No unpleasant results. Prompt relief of pain in every case, tendency of ulcerations to heal, hoarseness improved, and, where only infiltrations and edema, swelling markedly less after a few weeks. *Hinman.* 306

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

The X-rays will demonstrate much more accurately the extent of involvement than any other diagnostic agent. In determining the operability of a surgical condition in a patient suffering also with pulmonary tuberculosis, or in giving a prognosis in a known case of pulmonary tuberculosis, radiographic examination is essential. *Moore.* 367

Treatment. Frequency of gastric atony and dilatation, with resulting digestive symptoms and secondary toxic manifestations (aches and pains in chest and right hypochondrium, morning depression, insomnia, hepatic weight, vertigo, chilliness an hour after meals, fleeting edema, etc.), in pulmonary tuberculosis pointed out. Treatment: (1) Support to stomach and abdomen by Rose belt of plaster or moleskin, followed, upon improvement, by supporting belt to be worn continuously and later in daytime only. (2) No liquids with meals or for two to two and one-half hours after. (3) Lunch to be light. (4) Recumbency, with attempt to sleep for one-half to one hour after each meal. (5) No alcohol or fresh bread. (6) Medicinal treatment: Tr. nucis vomicæ, acidi hydrochlorici dil., āā f℥ss (15 c.c.); glyceriti pepsini, f℥iss (45 c.c.); aq. menthæ pip., q. s. ad f℥iij (90 c.c.). Teaspoonful in ½ glassful of water after meals. If much flatulence, add chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until relieved. (7) Cold shower or sponge baths, with needle bath to abdomen, followed by brisk rub, each morning. (8) Where mucous passages and flatus: Turkish towels, wrung out in hot water, to be applied to abdomen for one-half hour after meals. (9) Thorough mastication of food and abstention from worrying at meals. (10) Fats to be avoided at first. *F. N. Robinson.* Page 95

Measures to overcome fever described: (1) Where prolonged fever drains on patient's strength, pyramidon is drug to be preferred—5 grains (0.3 Gm.) in cachet at night, or, if necessary, three times a day. In neurotics bromides sometimes efficacious. (2) Rest in recumbency to be insisted on until temperature does not rise above 99° in men or 99.2° in women, when patient may sit in chair for two hours, then recline on couch, in open air if possible. Exercise then gradually increased. (3) Where severe cough, sedative mixture tends to prevent fever from the exertion and autoinoculation. (4) Where rest and drugs fail, cautious use of tuberculin (T. R. or B. E.), beginning with only $\frac{1}{100000}$ mg., exerts antipyretic action, though often only for short periods. Tuberculin acts best in cases free from fever while at rest, but febrile when exercise taken. *Wethered.* 120

Value of auscultation at acromion process in apical tuberculosis emphasized; it amplifies all auscultatory signs over apices. Of 28 cases in first stage, all showed acromial breathing. *Magida.* 239

Guaiacol administration, beginning with 5 minims (0.3 c.c.) three times daily, increasing by 2 minims (0.12 c.c.) a week up to 12 or 15 minims (0.75 to 1 c.c.), and continuing the drug for four months or longer, yielded highly satisfactory results. The drug should be taken immediately before food. The following formula was used: Guaiacolis, f℥j (4 c.c.); alcoholis, syrupi limonis, āā f℥j (30 c.c.); spiritus chloroformi, f℥ij (8 c.c.); aquæ, q. s. ad f℥vj (180 c.c.). One-half ounce three times daily. *Mayberry.* 366

Ulcer, Gastric. Diagnosis. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* 114

Treatment. Cream diet used with success in 26 cases. One quart (4 glasses) a day yields 1800 calories. To this may be added 600 c.c. of milk or 6 slices of bread or 5 tablespoonfuls of oatmeal gruel or 3 eggs. Cream causes inhibition of gastric secretion. If not tolerated in full strength, it may be diluted with equal or greater amount of milk. Ice-cream a useful variant. Some marked cases progressed to good recovery in two or three months under cream diet. Method adapted for bed or ambulant treatment. Also useful as prophylactic against recurrence of ulcer. *Nichols.* 169

Ulcers. Treatment. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

Urticaria. Treatment. Pituitary and adrenal preparations found useful. *Morris.* 11

Vaccination. Tincture of iodine, applied to the vesicle as soon as possible after the latter has formed, and repeated two or three days later, either prevents pustule formation or so limits it that the several pustules formed do not coalesce. The vesicles soon dry up and form a small scab. In not one of 116 cases so treated was there secondary infection with pus-producing bacteria, whereas in those not so treated about 30 per cent. were secondarily infected. There is no interference with the immunizing process. The scab should be kept covered with sterile gauze for several weeks. In cases of secondary infection with pus formation best results are obtained by removing the scab and pus, painting the base with tincture of iodine, and, when dry, covering with bismuth subiodide powder. Superfluous granulation tissue should be treated with a stick of silver nitrate. *Albert and Alden.* 369

Vomiting. Treatment. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Vomiting of Pregnancy. Treatment. Apomorphine, $\frac{1}{36}$ grain (0.0018 Gm.) in a teaspoonful of water, found effectual in a severe case; likewise in other cases of vomiting or nausea. *Field.* 182

Thyroidin in 1½-grain (0.1 Gm.) tabloids given in several cases, with complete curative effect. *Koreck.* Page 284

Brilliant results obtained in some cases by administration of thyroid preparations. *Walker.* 409

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1 : 1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received ⅓ c.c. as initial dose and ⅔ c.c. four days later; others, ½ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a bronchopneumonia as complication, a mixed vaccine should be used. *Davidson.* 118

Silver nitrate in 2 per cent. solution applied to throat in 95 early cases to prevent spread of infection downward from pharynx. Useful results in 84 instances. Mucus secretion prevented and coughing spells due to irritation by secretion minimized. Silver solution applied every day at first; later, and in older children throughout, on alternate days. *Ochsenius.* 182

Epinephrin, 3 minims (0.2 c.c.) of 1 : 1000 solution, given every four hours in case in a child 7 years old, ill six weeks. Paroxysms markedly reduced almost at once. Drug then continued 3 times a day for three weeks more. *Lord.* 280

Wounds. TREATMENT. Stream of air from ordinary electric fan or register found useful in drying and promoting healing in large wounds, obstinate leg ulcers, and discharging eczema. *Heisler.* 182

Mixture of saturated magnesium sulphate solution and glycerin in equal parts recommended for dressing infected wounds. *Freese.* 304

Following summary presented: *A. Incised wounds:* 1. Paint with iodine. 2. Shave dry. 3. Tie all bleeding points. 4. Remove foreign substances. 5. Suture all tendons and nerves. 6. Again apply iodine in and around wound. 7. Suture wound. 8. Apply dry sterile dressing.—*B. Lacerated wounds:* 1, 2, 3, 4, 5, same as in *A.* 6. Cut away all damaged tissue. 7. Again apply iodine. 8. Suture wound.—*C. Punctured wounds:* 1, 2, same as in *A.* 3. Enlarge opening for drainage. 4. Insert rubber drain. 5. Alcohol dressing. 6. Tetanus antitoxin.—*D. Gunshot or bullet wounds:* 1, 2, same as in *A.* 3. If much bleeding, enlarge opening and tie vessels. 4. If nerve injured, suture nerve. 5. Close wound. 6. Alcohol dressing. 7. Tetanus antitoxin. *Hoag.* 307

Book Reviews

SPEZIELLE PATHOLOGIE UND THERAPIE INNERER KRANKHEITEN. In 10 Bänden, Herausgegeben von Friedrich Kraus und Theodor Brugsch in Berlin. Lieferung 1-4 (I. Band, 1. Teil, Seite 1-238, mit 5 farbigen und 4 schwarzen Tafeln. Lieferung 5-8 (II. Band, 1. Hälfte, Seite 1-240, mit 3 farbigen Tafeln). Berlin und Wien: Urban & Schwarzenberg. New York: Rebman Company, 1913. Paper-bound, Each Issue: 2 marks (50 cents).

The first part of this imposing and altogether excellent system of medicine contains an article on diabetes, including levulosuria, heptosuria, pentosuria, etc., by Prof. Magnus-Levy; an unusual and very valuable section on disturbances of intermediate metabolism,—amino-acid diathesis, physiology and pathology of water elimination (including diabetes insipidus), and cachexias,—by Prof. Umber, and a 200-page, well-illustrated chapter on gout, by Prof. Brugsch.

The second portion of the system issued—actually the first half of the second volume, the terminal sections of the first volume not having yet been issued—contains a section on infection and immunity in general, with a discussion of immunodiagnosis and therapy, by Prof. R. Kraus, of Buenos Aires, and an article on typhoid and paratyphoid fevers, by Prof. G. Jürgens, of Berlin. The former contains paragraphs on the technique of bacteriologic study of the blood and urine, of the demonstration of blood protozoa, of filterable viruses; on natural and artificial immunity, antigens and antibodies, opsonins, bacteriotropins, phagocytosis, antitoxins, agglutinins, anaphylaxis, etc. The serum diagnosis of various pathologic states is also comprehensively considered, and, finally, serum therapy. Typhoid fever is discussed in thoroughgoing fashion, but only the section on treatment is unfinished, the greater part of this section, as well as the discussion of paratyphoid fever, being left for a succeeding number of the work. The contributors to the initial sections of this system of medicine—which is to include altogether ten volumes—are to be congratulated on the excellence of their respective articles.

Clinical Hematology: An Introduction to the Clinical Study of the So-called Blood Diseases and of Allied Disorders. By Gordon R. Ward, M.D. Fellow of the Royal Society of Medicine, the Medical Society of London, etc. Octavo of 394 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.50, net.

This volume deals with the *clinical* study of the blood, which, the author holds, has been too much overshadowed by exclusively pathologic investigation. Much attention is paid to the proper classification of blood diseases. There are systematically taken up: The blood-forming organs; the method of blood examination; generalized affections of blood-forming tissues; chloroma and myelemia; Hodgkin's disease and Gaucher's splenomegaly; localized affections of blood-forming tissues (leukemias, etc.); increased red-cell formation; acute aplastic anemia; atrophic and other secondary anemias; cholemia; Addisonian anemia; hemochromatosis, etc.; parasitic diseases of the red cells; cyanosis; leucocytosis; chlorosis; hemophilia; purpura; leukanemia; the blood in surgical diagnosis; methods of treatment, and the blood in various diseases. The plan of this work is an excellently conceived one, and the book cannot fail to prove of great practical utility. The most recent gleanings in this field are referred to, at least in their practical bearings. The illustrations are not numerous, but the clinical photographic reproductions are striking. The work can be warmly recommended.

Materia Medica, Pharmacology, Therapeutics, and Prescription Writing, for Students and Practitioners. By Walter A. Bastedo, Ph.G., M.D., Associate in Pharmacology and Therapeutics at Columbia University, etc. Octavo of 602 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $3.50, net.

This interesting volume is, for the most part, an adaptation of lectures delivered at Columbia University. In its preparation the author has laid most stress upon matters bearing on practice, even to the exclusion of some subjects of great pharmacologic interest. In Part I are considered general topics, such as the constituents of organic drugs, the various types of pharmaceutic preparations, active principles and assay processes, dosage, modes and time of administration, and the sites and modes of action of drugs. In Part II, occupying the bulk of the volume, the various individual remedies are systematically considered, beginning with the locally acting drugs, and continuing with those agents which have a general systemic effect. Part III, covering about 20 pages, is on prescription writing.

There is much to commend in this book. The views introduced are strictly up to date, and the text, as a whole, is decidedly original as well as useful. Among the meritorious features are the divisions of ammonium compounds into those which are and those which are not dependent for their activity on the liberation of ammonia gas—a grouping which facilitates proper understanding of the physiologic action of these compounds—and the very detailed consideration of the action of digitalis, with due attention to its effects on the various forms of cardiac arrhythmia, the significance of which has recently been brought to light by Mackenzie, Lewis, and others. In general, the chief drugs in daily use are taken up at special length, while to those of inferior utility but little space is devoted. The author has clearly made the attempt, wherever possible, to correlate clinical use with pharmacologic laboratory data, and appears to come closer to the realization of a rational scheme of drug therapeusis than is afforded in any other textbook so far issued. As a minor point in criticism, objection might be made to the systematic omission of the official Latin names of the drugs considered. On page 204 the dose of ammonium carbonate has been inadvertently omitted, and on page 90 the misleading statement is made that "perhydrol (unofficial) is the magnesium peroxide." Apart from a few slips such as these, the work is certainly entitled to high praise, and can be warmly recommended, both to the practitioner, and for the use of the undergraduate student.

The General Field

Conducted by A. G. CRANDALL

High Appreciation

A Southern newspaper has declared the present occupant of the White House to be the greatest of all American presidents.

Numerous predecessors of the present incumbent have been favored in a similar manner.

There is no time during which a chief magistrate is referred to in such high terms of praise as while the offices are being filled, but should a rival aspirant receive some much-desired appointment it is more than possible that the paper above referred to would somewhat modify its views.

American history shows few evidences of anything but the most sincere attention to public duty on the part of the various presidents. Each has had his strong and his weak points, and it is probable that if Mr. Wilson does not measure up to the enthusiastic estimation of his editorial admirer it will not be through any lack of conscientious effort. But it would be too much to expect that he should have continued very long in his present high office without antagonizing some of those who at the outset of his presidential term and with profitable offices in view had been most lavish in his praise.

* * *

Textbooks Needed

It is getting to be tremendously hard for the average husband to meet the requirements. A large number of women are having their husbands chased from one part of the country to the other, eventually apprehended, and hauled into court to explain the reasons why their loving wives cannot have the benefit of their company. Needless to say, the reasons given are seldom satisfactory. On the other hand, many women are appealing to the courts to try to induce their husbands to break away from the enticements of home and go out into the wicked world and earn the wherewithal to pay some of the numerous household bills.

All of this is not in the least surprising. While a great variety of information has been standardized and reduced to textbook form, there is apparently no reliable textbook on matrimony. Many a man who has been conspicuously successful in business or some profession has seemed to get terribly muddled in his matrimonial affairs. On the other hand, there are men who, although failures with everything else, have been uniformly successful in several matrimonial voyages. Some of these specialists should prepare a textbook for the guidance of amateurs or those so engrossed in their cares of business that they have never been able to give the more important subject the attention which it deserved.

* * *

Jupiter Pluvius—Street Cleaner

One of the effective arguments formerly used to reconcile taxpayers in the large cities to the prospect of extra assessments for asphalt streets was the alluring picture of a daily wash of the smooth thoroughfare by

enthusiastic disciples of hygiene wearing white uniforms.

As a matter of fact, however, this daily cleansing program is not usually carried out. There is always some contractor who has a pull and who does not take sufficient interest in public health to assume the little additional expense necessary to flushing the streets.

Jupiter Pluvius, however, has taken up this job the present season and carried it out with great success. Frequent showers have cleansed the streets in numerous cities in a manner practically without precedent.

* * *

Eliminate the Rodents

When a case of plague develops in a seaboard city, the rat is immediately placed under suspicion.

The next move is promptly to begin a campaign of extermination, which usually results in a considerable decrease in the rat population before the excitement subsides.

It would be a good thing in many ways if this campaign could be continuous. The rat is a source of much economic loss to the community and his capacity for distributing disease germs is undoubtedly underestimated. There is probably no more glaring instance of a habit of neglect than that indicated by the comparative immunity which has been enjoyed by the rat and his numerous descendants.

The fact is our easy-going methods are responsible for enormous unnecessary losses each year. Destructive insects are allowed to ravage the shrubs along the roadside until they develop into an army of devastation which attack the forests. Irresponsible recruits to our population who come from foreign countries where the laws against trespass are rigorously carried out are permitted to shoot insect-destroying song birds and in many ways to make themselves generally obnoxious through our easy-going tolerance.

* * *

Retaliation

The physician is so much the property of the public that he is usually more or less a public victim. Like the clergyman, the doctor must submit to all kinds of imposition and retain his good nature.

As long as this form of persecution is good-natured, the physician can afford to regard it with tolerance. But when slander gets in its work, it is a serious matter.

There are occasions in the experience of many doctors when a real service could be done the medical profession and the public as well by instituting suits for damages to the professional reputation. Almost any physician would hesitate to do this, which fact being understood submits a great number of doctors to much injustice. A few sharp retaliatory damage suits would undoubtedly develop a disposition to go slow in circulating slanderous tales about the doctor.

* * *

Old Styles in Medication

A prominent physician of Cincinnati recently gave his testimony in defense of an old remedy which has more recently gone out of style in many sections of the country. This gentleman says that in Cincinnati, where veratrum viride is used very generally and in large doses, they consider it a perfectly safe remedy when properly administered. He

would recommend its use highly in eclampsia.

Another well-known medical writer advises his colleagues to go back to the old reliable sulphur in the treatment of boils and carbuncles. He indicates that the philosophy of the ancients was correct, and that the recommendation of old-time housewives that the "system" is benefited by a spring course of cleansing of the blood by sulphur and molasses was strictly scientific and worked out in modern practice.

Careful students are doubtless well repaid for delving into the more ancient textbooks and reviving some of the favorite remedies of the pioneers of the last century, methods of cure which have been superseded by a succession of new expedients, many of which, no doubt, were little, if any, improvement over the methods of the past.

* * *

The Economic Phases of the Liquor Question

It is but natural that physicians, who above all others become skeptical of dogmatism, should fail to endorse the views of extremists in the matter of restricting the sale of intoxicants. They see so many people of supposed exemplary habits either die in middle age or become permanently crippled, and see so many of more indulgent tendencies live on and on to an advanced age, that they fail to echo the enthusiastic zeal of those who would correct the manner of life of their fellows.

There is one phase of the liquor question which no thoughtful person can fail to appreciate, namely, the economic. The head of a family who has but limited earning capacity, but who indulges himself even sparingly in alcoholics, may die in middle life not from the physiologic effects of his drinking habit, but from the privation and lack of hygienic surroundings engendered by his bad judgment in spending his limited funds for luxuries rather than necessities. The saloon may be the poor man's club, but it is a very expensive club to belong to, especially if he is of social temperament and predisposed to the treating custom.

The contentions of those who take an extreme view as to the iniquities of the liquor traffic are in this matter well sustained. As an economic problem the liquor question takes first rank among the great topics of the day.

* * *

The Comic Opera War

There are many thrills associated with the dispatch of our armies and warships on various patriotic errands, but somehow the thrills failed to materialize in connection with the recent military occupation of Vera Cruz.

About the most gratifying phase of the situation thus far is the fact that the health of the troops has apparently remained good. This is an achievement which reflects great credit upon the medical branch of the army, but when it comes to the matter of military glory there is little to be said. It is true that thus far no scandals in regard to the quality of food supplied have been reported to arouse public disgust, but if 25 average citizens of the United States were stopped in succession on the street and asked just why a large number of warships and several thousand

troops were spending the summer at Vera Cruz the probabilities are that few of them would be able to give any real substantial reason.

The Mexican situation has, however, provided inspiration for at least a half-dozen comic operas which will, no doubt, be forthcoming in due time. The commanding military genius of Mexico should, and undoubtedly will, occupy a conspicuous place in these dramatic exhibits, and perhaps his $400 bathtub will not be overlooked.

* * *

Woman's New Weapon

As the shipment of beef cattle naturally falls off during the trying weather of midsummer, there is usually a certain justification in the prices of dressed meats advancing at this season, when they must be shipped at extra heavy expense for refrigeration.

All these natural causes, however, are airily waved aside by the Housekeepers' League, which is now advising a boycott.

Really, when you come to think it over, it is not such a bad idea to boycott the high-priced meats during the heated term,—in fact, there are other foods the use of which could be restricted to considerable advantage during the same period.

All that would be necessary to create terror and consternation among food dealers would be for the entire population to go on a food strike for about a month, or say forty days, like the justly celebrated Dr. Tanner. There would thus be an opportunity to try out the starvation cure for cancer and various other diseases for which this method is said by certain eminent cranks to be the greatest known specific. At the end of forty days most of the objectionable food barons would be in bankruptcy, and doctors and undertakers would be enjoying a badly needed vacation. The human race would have been largely regenerated and Upton Sinclair would have had a chance to take his own treatment. The only danger might be that the water companies would form a general trust and put up the price of plain aqua pura.

* * *

Cotton "Picker Rooms"

In the "picker rooms" of the New England cotton mills the air becomes so saturated with lint that under certain circumstances the introduction of a sheet of flame may act like an explosion of gunpowder. This condition of the atmosphere in workrooms occupied by a considerable number of people constitutes one of the most perplexing fire-hazard problems known in these industries.

While this question has assumed large proportions with factory owners in determining how they may protect their plants from the ever-present danger of fire, the physiologic side of the problem has apparently not interested them so much. From the somewhat crude standpoint of the outsider unfamiliar with the technical details of cotton spinning, the solution of the matter would seem to be the installation of exhaust devices primarily providing for more hygienic conditions for operatives and let the resulting reduction of the fire hazard be incidental.

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Department on the Internal Secretions

Original Articles and Summaries of Selected Articles

SOME MOOTED POINTS IN THE PATHOGENESIS AND TREATMENT OF DISORDERS OF THE DUCTLESS GLANDS.*

BY R. ALEXANDER BATE, A.B., M.D.,
LOUISVILLE, KY.

WHILE the diseases of the ductless glands are receiving considerable attention, the general practitioner often encounters problems which available knowledge does not seem to solve. All observations of an unusual character cannot but prove useful, therefore, even though they serve only as riddles for the investigators. How, for instance, is one to explain the following case: A well-nourished, apparently healthy Hebrew girl, 15 years of age, was examined by a school physician about eighteen months ago, and referred to a laryngologist for the removal of her tonsils and adenoids. Shortly after this operation there developed emaciation, asthenia, vertigo, pigmentation, and inability to make the upper and lower teeth meet, death following within a year. Had an "epithelial body," or perhaps the so-called "glandular strand" of the hypophysis, unwittingly been removed? This question is suggested by the following facts: The thyroid, parathyroids, thymus, and anterior pituitary glands originate from the primitive pharynx. Piersol has observed a prolongation of the hypophysis, persistent during life, passing through a canal in the base of the skull and connecting with the oral epithelium. Cushing observes that accessory glandules may persist anywhere between the pharynx and the pituitary body. Glands and a glandular strand are usually to be found in the pharyngeal mucosa.

Yet, the case referred to presents the characteristics of Addison's disease in its rapid form. The emphasis laid by Sajous on the intimate connection between the various ductless glands and the adrenals, with the latter organs

* Summary of paper read before the Louisville Society of Medicine.

as predominant factors, affords a more direct explanation. Reflex paresis of the adrenals in the child, through the action of the sympathetic system which governs the functions of these organs, would suffice to explain the lethal termination. Are we dealing only with a concomitant development of the Addisonian syndrome? This is also a possibility.

Conception has seemed, at least in the writer's practice, to be greatly facilitated by hyperthyroidism. He has not observed a case of exophthalmic goiter in which, pregnancy being possible, it did not occur quickly and repeatedly. The use of thyroid gland in the obese also favors pregnancy, as previously noted by Montgomery. In 1 of the writer's own cases, a woman of 240 pounds, whom thyroid gland had reduced to 200 pounds, conception occurred, though eleven years of married life had proven sterile. A normal pregnancy and labor followed.

How is one to explain this phenomenon? The thyroid gland enlarges during menstruation. Lange found it enlarged during the fifth and sixth months of pregnancy. The anterior lobe of the pituitary gland is known also to enlarge during pregnancy, and this is said to account for skeletal and other tissue growth observed during gestation. Greater oxidation in the tissues must be effected; hence the increased activity of the adrenal system *i.e.*, of the pituitary, thyroid, and adrenals. Manifestly, it is the general vital functions that are enhanced under the influence of the overactive thyroid gland of hyperthyroidism, and the reproductive apparatus takes part in this enhanced activity.

The above facts also afford explanation of a remarkable case of Dr. Frank C. Wilson, in which a patient grew 6 inches during an attack of typhoid fever. The thyroid gland hypertrophies and becomes congested apparently in all infectious diseases, presumably—according to Sajous—to raise resistance to disease, both by enhanced oxidation and the production of bacteriotropic substances, thyroiodase or opsonins and agglutinins. Thus it appears possible that the same cause may operate to produce changes in the pituitary, the thyroid, and the adrenals. The anterior pituitary may have been primarily influential in causing the rapid skeletal changes, by exciting the other glands of the adrenal system. Yet, Cushing believes changes occur in these several glands because of biochemic factors and not because of a vicarious function of the structure left behind. It certainly appears to me that this biochemic action is itself vicarious or at least complemental. Except for the presence of exophthalmos, Cushing recognized no symptom of hyperthyroidism in cases observed with enlarged hypophysis. If these cases were attended by destructive lesions of the latter organ, one could not expect hyperthyroidism, since overactivity of the pituitary could alone induce it.

Sajous holds that disturbances of various ductless glands are often due to disorders of the sympathetic system. Excessive sweating of the palms of the hands and many minor symptoms of hypothyroidism, for instance, may be referred to the sympathetic system through heredity. This is confirmed by the writer's observations of 35 cases in private practice; 3 have

been the daughters of exophthalmic mothers. Several subjects were prematurely born, and many more were the first born,—though history relative to this point was not obtained in many cases. That prenatal conditions may occur as causative factors is also suggested by the fact that pregnancy is attended by pituitary, thyroid, and adrenal changes. We know that the vomiting of pregnancy ceases about the time the thyroid hyperplasia occurs. Could an unbalanced maternal adrenal system predispose to an uncertain equilibrium in the adrenal system of the progeny?

Gouty tendencies have seemed to some to play a predisposing part in exophthalmic goiter. I have not found mentioned an immunity on the part of the negro race; but neither in private nor public clinical practice have I seen a case of exophthalmic goiter except in 1 octoroon and 1 negro girl. The fact that females are affected so much more frequently than men is probably due to regular menstrual and gestational congestion of the thyroid in the former, and its apparent ovarian coactivity. Besides, it is a fact that the reflex system is more easily impressed in the female. Gastroenteroptosis is likewise much more frequent in females. Several cases of Graves's disease have been reported as cured by the use of the Rose abdominal adhesive straps.

Fright, anger, any profound emotion, through the shock imparted to the sympathetic, may disturb the equilibrium of the adrenal system.

A young man 21 years of age was accompanying a friend in Chicago to hear Roosevelt speak. The building was so packed, because of the crowd outside forcing more in, that many fainted—among them the young man's friend. The young man became much agitated because of this, and very shortly afterward he was found to have exophthalmic goiter.

In the case of the octoroon previously referred to, an emotional beginning was also witnessed. This patient became very angry, and almost immediately enlargement of the thyroid, great weakness, muscular tremors, very slight exophthalmos, headache, tachycardia, and sweats occurred. All the symptoms disappeared under treatment in less than three months. The predominance of sympathetic influence in all these cases is obvious.

Atony of the large intestine has been variously regarded as both the cause and effect of exophthalmic goiter. The absence of symptoms of disturbance of the adrenal system in cystic goiter has led me to the thought that the cystic tumor may actually develop from the tissue derived from the two lateral anlages, considered by some not to be true thyroid cells.

Dock believes exophthalmic goiter no uncommon disease, constituting 1 case in about every 100 medical cases coming under his care. The disease has appeared to me to be greatly on the increase. Can this be due to overstimulation of sexual desire by modern dress and customs; or to ungratified lust from delayed marriages; or to diminished pregnancies? Sajous holds that we should look for autointoxication in its various forms as a predominant cause.

A diagnosis of Graves's disease can, in most cases, be made before tachycardia or exophthalmos exist. It is not always easy or even possible

to say when the symptoms of hyperthyroidism have merged into hypothyroidism. Indeed, during the transition stage, the patient is greatly improved. The myxedematous or last stage is, however, again easily recognized or differentiated.

In dyspituitarism skeletal changes are usually observable. Adenoid growths, tonsillar hyperplasia, and optic nerve changes usually exist. The so-called neighborhood symptoms of Cushing are present if the pituitary change causes any pressure upon adjacent tissues. Glycosuria, headache, vomiting, blood-pressure variations, and many other phenomena are present in disturbances of any of the three ductless glands constituting the adrenal system. In dysthyroidism the headache is similar to that of iodism and there are no signs of intracranial pressure. Undoubtedly neurasthenic symptoms precede the cases that are slow in development. Close inspection, together with the history, may clear up the doubt in these instances.

Certainly the prognosis of exophthalmic goiter is much more favorable than formerly. Not a case coming under my observation has failed to improve. Only a few, however, have shown disappearance of all anatomic changes. Exophthalmos, thyroid hyperplasia, and tachycardia entirely disappeared from 3 cases. Tachycardia has disappeared from every case that has remained under observation one year.

Exophthalmos perhaps depends, from my viewpoint, upon pituitary reactions transmitted through the sympathetic and the fifth nerves, and to the cervical branches of the sympathetic. These nerves are stimulated to activity by thyroid substance, by certain toxins, and by emotions, as fear, etc. While Cushing believes the exophthalmos of pituitary tumor a neighborhood symptom, exophthalmos has been relieved by the removal of the thyroid gland and sometimes by section of the cervical sympathetic. The operation in both instances has relieved the exophthalmos of the corresponding side. In some cases, although hyperthyroidism or the cause of the exophthalmos may have been removed, the protrusion may persist because of permanent hyperplasia.

Tachycardia occurs in diseases paralyzing branches of the vagus. Possibly the adrenal system disturbances traced to intestinal toxemia impress the sympathetic system through this connection. Correlated effects are observed from the ingestion of thyroid substance.

Atrophy of the thyroid, kidneys, brain, and adrenals, as well as other organs, is said to take place from continued overdoses of thyroid substance. Yet it may be mentioned here that the use of thyroid has been found serviceable in arrested growth, delayed union of fractures, tetany of gastroenteric origin, and in puerperal eclampsia. It is to its use in excessive doses or too long that one must ascribe all morbid symptoms. It is contraindicated in albuminuria, as it congests the kidneys. Indeed, my experience has led me to doubt its usefulness in puerperal eclampsia, because of its effect upon the kidneys.

The indications for medical treatment in exophthalmic goiter depend entirely upon the cause and the morbid changes existing at the time of

observation. In the stage of hyperthyroidism the equilibrium of the adrenal system should be restored by the use of the complemental secretions and by controlling the sympathetic system. The cause should also be removed when possible. Before pituitary substances were on the market, the *adrenal secretion* appeared antidotal to the thyroid, and was fairly successful in its result, as observed by myself in several cases. The use of *pituitary substance* (posterior lobe) seems much more rational, however, in that it controls both thyroid and adrenal activity and favorably influences the sympathetic if given in small doses. Most glandular preparations, in my estimation, are frequently given in excessive doses.

Quinine preparations probably yield their excellent results in two ways, —which may, after all, be one. The iodine is counteracted, and "the sympathetic center is stimulated" (Sajous). Vasoconstriction occurs; there is contraction of the central vascular trunks; reflex sensibility is influenced; leucocytes laden with iodine are checked in their movements, and the elimination of urea is enhanced, while its formation is greatly cut down. Quinine hydrobromide, valerianate, and sulphate have usually been selected in my practice. Crile's anociassociation technique has so brought into notice the quinine and urea salt, however, that the latter will probably be generally employed for its influence upon the sympathetic system.

The rather homeopathic use of *iodine inunctions* over the hyperplasia of the thyroid has proven very satisfactory in the reduction of the glands and consequent symptoms. Recently John Edwin Hays mentioned to me the specific action of *strophanthus* in exophthalmic goiter. Its use has given most satisfactory results. I can find very little reference to its employment. Not even Sajous speaks of it; but his explanation of the physiologic action of strophanthus explains the results.

On the whole, the quinine salts should be used along with the strophanthus, just as with the pituitary substance. From the results observed I believe the strophanthus compels the secretion of what is artificially supplied by the exhibition of pituitary substance.

The use of *thymus gland* has been reported as followed by excellent results in cases that had resisted all other treatment. There have been several observations tending to indicate that the thymus and thyroid glands are just the antithesis of complemental, viz., that one serves as a possible check upon the other. Thus, the thymus is most active in its prenatal state, while the thyroid is most active postnatally, as the thymus activity subsides. This suggests, in its turn, that thyroid administration may be indicated not only to control the vomiting of pregnancy, but to prevent thyroid excess in the progeny.

It is not always easy to determine the proper line of treatment, as the stage of hyperthyroidism merges into that of hypothyroidism. The same principles are still to be applied, but proper judgment on the part of the physician will greatly influence the result. The hypothyroidism, or cachexia strumipriva, is to be treated with the opposite agents, *i.e.*, the deficient thyroid secretion must be supplied. The explanation of the thyroid and

iodine intolerance in some cases, and of thyroid and iodine tolerance in others, is, of course, quite clear now. Hyperthyroidism is a condition in which there is already too much thyroiodase in the system; in hypothyroidism there is an insufficiency or a total deficiency of the secretion.

The use of *serums* from animals from which the thyroids have previously been removed has always impressed me as a slow method of giving the patient pituitary and adrenal substances unneutralized by thyroid secretion. *Pancreatic preparations* are undoubtedly of service. *Alkaline aperients* and *rest* of body and mind must be judiciously used by the physician as occasion demands.

Surgical treatment has seemed quite satisfactory in many reported cases, but there have been no results in others, and death or cachexia strumipriva has followed in some. On the whole, surgical treatment seems unscientific, unless a pathologic growth or mechanical cause exists.

Hale White, recording the results of medical management of exophthalmic goiter during the last twenty years, finds that in about 80 per cent. of cases the recovery has been permanent. "In my own personal and consultation practice," says Solis-Cohen, "I have had the opportunity to observe a number of patients for periods varying from a few months to twenty-five years after apparent recovery under non-surgical treatment. In but one instance has there been relapse, and in no case has death occurred from any condition with which Graves's disorder could be causatively associated."

THE SYNDROME OF PERSISTENT JUVENILITY.*

By DR. LÉOPOLD-LÉVI,

PARIS, FRANCE.

Persistent juvenility not exceeding physiologic limits is characterized by lack of the corpulence commonly observed in elderly individuals and an easy gait, frequently the result of continued indulgence in outdoor sports. Juvenility is not reflected solely in the external appearance; each active apparatus in the organism preserves in its functioning the characteristics of youth. Juvenile persons are frequently great heat producers, withstanding cold well and often going without overcoats in the winter time. The voice remains young and fresh. The psychic condition is also of interest, these individuals often continuing to feel a need of constant activity and movement, doing things with feverish haste, *e.g.*, eating rapidly. They are quick, pleasure-loving, fond of novelties, inquisitive, enthusiastic, and optimistic. The sexual apparatus remains active longer than usual, menstruation continuing, for example, to the age of 55 years.

* Summary of article in Bulletins et Mémoires de la Société de Médecine de Paris, February 28, 1914.

In more pronounced—abnormal—juvenility there is noted a tendency to excitement of various systems of organs, whence arise various special clinical manifestations, such as tachycardia and palpitation; ready production of diarrhea by relatively slight causes; itching and especial sensitiveness of the skin to the application of topical remedies, and general muscular spasm. The reactions of the organs to external influences are also exaggerated. High fever is readily developed, even from slight infections.

Sometimes the condition is even more pathologic. The juvenile individual often consults the physician merely for a *thyroidolepsy*. The patient suffers from migraine or vertigo, asthma, mucomembranous enteritis, skin disorders or attacks of rheumatism, acute gouty attacks, paroxysmal angor, periods of hyperthyroidism, and temporary recrudescences of Basedow's disease. A methodical search frequently will show, especially in the female sex, a small endogenous goiter. The presence of sugar in the urine is not exceptional in this condition.

From the above picture, which is that of complete persisting juvenility, must be differentiated others with variations from the general type. Thus, juvenilism may exist, but a few discordant features assert themselves simultaneously. The subject's skin may still present a roseate tint, and the eyes remain bright and the eyebrows black; but the hair has fallen out or, more frequently, has turned white. At times a slight adipose excess does not remove the juvenile appearance.

In other instances the juvenility is *partial,* manifesting itself in a single feature which clashes with the other physical peculiarities as a whole. Such a feature may be, *e.g.,* the persistence of black hair, a persisting good condition of the teeth, or a freshness of the voice, which contrasts with the manifest general results of wear and tear in the same subject.

Juvenility and *senility* are at times in admixture, a young-appearing face coexisting with white hair and beard. Again, a physique of elderly appearance may be associated with a juvenile psychic disposition, or *vice versâ.*

To a special form of juvenility may be applied the term *puerojuvenilism.* These subjects are chiefly young girls 25 to 30 years old who present the appearance of girls of 15 to 25.

Pathogenetic Significance of Persistent Juvenility.—Where persistent juvenility is met with in subjects normal in all respects it may be conceived that the tissues in general, or those of some organ or system of organs in particular, are offering an exceptional degree of resistance to the numerous usual causes of senescence. Such an explanation, however, while embodying an element of truth, is vague and lacks precision.

Actually, pathologic juvenile states permit better of working out this question of pathogenesis. In the first place, it is of interest to note in what morbid states persisting juvenility is to be met with. By the tachycardia, the readiness with which diarrhea is induced, the itching, and the general nervousness these subjects present, a tendency toward *hyperthyroidism* is suggested. This tendency is further accentuated when these subjects, as is

not infrequently the case, present one or more of the thyroidoleptic phenomena already referred to. Finally, juvenility may be said to form part in the Basedow syndrome; Campbell, *e.g.*, has reported 2 Basedow cases that appeared younger than they really were.

If, on the other hand, it is remembered that myxedema results in a premature senile state, each of the features of which is regularly opposed to those constituting the clinical picture of persisting juvenility, the contrast thus formed will afford an additional argument in favor of the pathogenetic relationship above suggested.

Thyroid treatment adds further and important evidence in its favor. Thyroid administration is, indeed, capable of evoking or accentuating the various characteristics of juvenility, viz., the roseate tint of the facial skin, the brightness of the eyes, the normal condition of the hair, mental activity, the sexual function, etc. Thus one is definitely led to attribute to exaggerated functioning of the thyroid gland a rôle of prime importance in the production of persistent juvenility.

This does not amount, however, to saying that the thyroid is alone the basis of the syndrome referred to. It is through a mutual functional accord of the ductless glands that the various activities of the body are directed, and the reaction of these glands, one upon the other, is a fundamental conception in endocrinology. Thus, in infantilism, a condition essentially subordinate to the testicular function, the subject presents an aged, wrinkled, gerodermic facial aspect, which betrays the influence of the testicles on the appearance of the individual. True, if the question in its entirety is to be considered, testicles (and ovaries) are themselves subordinate, in their development and functioning, to a normal condition of the thyroid gland. That the latter organ plays the essential part need not occasion surprise when its action on the oxidation, the nervous system, and the vasomotor and trophic system is recollected. To prevent premature old age or procure an extension of the juvenile period, organotherapy, in particular thyroid therapy, may thus be added to the other methods already available, such as correct diet, hygiene of the nervous system, skin, teeth, and hair, massage, and outdoor sports.

CORPUS-LUTEUM ORGANOTHERAPY IN CLINICAL PRACTICE.*

By WALTER T. DANNREUTHER, M.D.,

NEW YORK, N. Y.

Fresh corpus luteum or a desiccated extract of it is much more potent than the ovarian preparations, and its administration in suitable cases is followed by striking and gratifying results. The particular conditions for which it will be found serviceable and to which its use should be limited are:

* Summary of article in the Journal of the American Medical Association, January 31, 1914.

(1) Functional amenorrhea or scanty menstruation; (2) dysmenorrhea of ovarian origin; (3) manifestations of physiologic or artificial menopause, such as nervous or congestive disturbances of reflex origin (hot flashes, psychoneuroses, etc.); (4) "neurasthenic" symptoms during menstrual life; (5) sterility not due to pyogenic infections or mechanical obstruction; (6) where the function of one ovary is impaired, or one ovary has been removed, and the compensatory activity of the other is insufficient; (7) repeated abortions not due to disease or mechanical factors, and (8) hyperemesis in the early months of pregnancy. It is useless to prescribe corpus luteum in cases such as amenorrhea due to extreme anemia, dysmenorrhea due to cervical stenosis, or all cases of sterility.

The author has observed that (1) at first patients taking corpus luteum often complain of vertigo, but this rapidly disappears; (2) toleration is soon established; (3) its physiologic action does not resemble that of adrenalin and it does not elevate blood-pressure; (4) the pulse rate is usually increased; (5) it is of the utmost importance to employ an extract obtained from the ovaries of pregnant animals only, and (6) constant supervision of the blood-pressure of patients taking corpus luteum is imperative.

A distinction must be made between corpus luteum (the fresh yellow body), ordinary desiccated extracts, and those made from the ovaries of pregnant animals exclusively. The use of fresh corpus luteum, fed to patients as a salad or sandwich in large and uncertain doses, has been discontinued. The author has used, to the practical exclusion of all others, an extract obtained from pregnant cows, which, although it cannot be accurately assayed, represents approximately 6 times the weight of the moist glandular substance. He prescribes 5-grain (0.3 Gm.) capsules three times a day and has seldom had occasion to increase this quantity, although 10-grain (0.6 Gm.) doses have been necessary in certain instances. The potency of such amounts is almost a verification of the source of the extract. He has nearly always observed a reduction of blood-pressure after a week's use of the 5-grain doses, and whenever the pressure drops too rapidly the patient is ordered to discontinue the drug temporarily. Before the physician gives a patient corpus luteum he should take a careful sphygmomanometric reading, and weekly readings thereafter. If the blood-pressure falls as much at 15 mm. the treatment should be stopped until 10 mm. of this loss has been recovered, when it may be cautiously resumed. At times, however, a decrease of even 15 mm. of blood-pressure would be beyond the limit of safety; it should never be permitted to fall below 90 mm. Another point of importance is the necessity of always getting a comparatively freshly made extract. The author would place the limit of time on its reliability after manufacture at about three months.

The author's experience with the drug includes about 80 selected cases, the greater number in private practice. With few exceptions, the results were very encouraging. In the slightly obese, pale, and anemic type of young woman who soon after puberty consults the physician because of

headaches, malaise, nervousness, acne vulgaris, constipation, and scanty menstruation, while proper hygienic measures, with arsenic and iron, are of value, the conjoint administration of corpus luteum extract apparently promotes the menstrual flow and has a salutary effect on the general economy. In addition, the author has frequently noted a loss of the excess in weight and a marked improvement in tissue tonicity in these patients. Cases of dysmenorrhea due to functional ovarian deficiency were almost invariably relieved by corpus luteum. Climacteric symptoms, such as hot flashes, psychoses, vesical irritation, etc., due either to the physiologic or artificial menopause, were prevented or readily controlled. The results in these cases were most striking, even after hydrotherapy, the valerianates, bromides, etc., had proved of no advantage. In 2 cases of pruritus vulvæ, associated with the menopause, the itching was so quickly alleviated by corpus luteum as almost to indicate a selective action on the external genitalia.

Instances of so-called "neurasthenia" occurring in women during menstrual life, often really reflex manifestations of menstrual disturbances, may be entirely relieved by a proper extract of corpus luteum, after other extracts have proven of no avail. Most cases of sterility in women are due to gonococcal or other pyogenic infections, cervical stenosis, or some other local cause. Occasionally, however, examination of a patient shows nothing pathologic in the pelvis. For example, a married woman of 31, in apparent good health, sought advice in March, 1913. She complained of scanty menstruation, prolonged intervals, and sterility. She had two children, but was anxious to conceive again. Corpus luteum extract, in full doses, promptly increased the quantity of her flow and reduced the intermenstrual interval to about twenty-six days. She became pregnant the following July. It would appear that corpus luteum is not wholly without merit in enhancing the possibility of pregnancy in sterile women, particularly if used in conjunction with intrauterine negative galvanism. When one ovary has been destroyed or removed, or its function impaired, there usually occurs a compensatory activity in the remaining or healthy ovary. But at times the apparently healthy ovary, for one reason or another, is incapable of assuming the added burden. Corpus luteum is then indicated as a supplementary aid, and the results therefrom in these cases, with one exception, have been excellent. One of 2 cases of repeated abortion in which the cause was obscure was carried to full-term labor by the use of corpus luteum extract. Corpus luteum is also of service in allaying the hyperemesis of early pregnancy.

In one of the author's cases menstruation was re-established by corpus luteum extract after bilateral salpingo-oöphorectomy. She was given 5 grains (0.3 Gm.) of corpus luteum extract, in capsules, three times a day. The extract was commenced October 27, 1912. On January 2 and 3, 1913, she experienced slight backache and a sensation of fullness in the pelvis, and, on January 4th, began a menstrual flow, which lasted three days. On January 29th, she menstruated again for three days, more profusely than the first time. On February 26th and March 29th, the duration of the flow

was prolonged for five days each time. The capsules had been taken regularly until the latter date, except for short intervals necessitated by decreased blood-pressure. After the fourth menstruation the patient was instructed to take the luteum only during the ten days immediately preceding the expected date of menstruation, as it was evident that the menstrual function was becoming firmly re-established. That this view was justified was clearly shown by a report from her the following August, that she had menstruated for about five days every thirty days. The specimens from this case were enucleated intact, and close inspection demonstrated beyond all question that no ovarian tissue was left in this patient's pelvis. Permanent continuance of regular menstrual periods in this patient until she reaches the natural menopause age cannot be predicted with positive assurance, but the recurrence of menstruation for even one year and the absence of unpleasant reflex symptoms are encouraging.

RELATIONS BETWEEN ADRENAL SYNDROMES AND DISTURBANCES OF THE ADRENAL FUNCTIONS.*

By LÉON BERNARD, M.D.,

PARIS, FRANCE.

The adrenals contain three varieties of cells, essentially different in their embryonic origin, morphologic features, chemical constitution, functional rôle, and morbid reactions. These are: (1) The cortical cells; (2) the medullary cells, and (3) the nerve-cells.

The *cortical cells,* which make up the entire cortex, but may also exist as small inclusions in the medullary substance, are glandular cells secreting several kinds of products. The most important of the latter is a mixture of lipoids among which may be recognized lecithins (Bernard, Bigart and H. Labbé, Mulon) and cholesterin (Chauffard, J. Troisier, and Grigant). These fatty substances distend the cells, occurring variously in a dichroic state, in the form of fixed fat, or as labile fat. This diversity of form might lead to the supposition of different cells existing in the cortex. Such is, however, not the case, the cortical cell being a single element, though its most perfect type is the spongiocyte (Guieysse), the especial aspect of which is due to the presence of labile fat, *i.e.,* of lipoids. The author's experiments, confirmed by Bardier and Bonne, have shown that it is to these spongiocytes that falls the task of neutralizing muscular poisons—the myotonic function of the organ. By general consensus there is also attributed to them a general antitoxic function, the existence of which is rendered probable by all that is now known concerning the rôle of the lipoids in the defense of the organism, but can hardly be said to have been definitely demonstrated by experiments intended to show it directly. It is

* Summary of article in Presse médicale, October 4, 1913.

possible that the adrenals produce these antitoxic substances, but are not themselves the seat of the antitoxic reaction. The cortical cells also produce siderophile substances and pigments, the rôle of which is not yet exactly known.

The *medullary cells,* also termed chromaffine or chromophile, have, on the other hand, been carefully studied. The granulations they contain produce epinephrin, which, as a true internal secretion, escapes from the organ, to circulate in the blood. Since epinephrin assists in the regulation of blood-pressure by virtue of its hypertensive property, it is the chromaffine cell which must be considered the basis of the angiotonic function of the adrenals.

The *nerve-cells,* met with in the medullary portion of the organ, as well as in the surrounding connective-tissue capsules, are in intimate relationship, on the one hand, with the solar sympathetic system, and, on the other, with the chromaffine cells. In all parts of the organism containing them, sympathetic and chromaffine cells are found associated, and to this anatomic association doubtless corresponds a physiologic solidarity, concerning which, however, insufficient knowledge is now at hand.

By reason of various morbid processes, the cells above described undergo changes which the author, with Bigart, has studied in intoxication experiments.

Hyperepinephria is accompanied by a change of all the cortical cells into spongiocytes. The latter contain a large, clear nucleus, and their protoplasm is filled with labile fat. The excess production of labile fat is so marked that some can be seen in droplets outside of the cells themselves. The increased size of the cells causes, moreover, a disturbance in their trabecular grouping, and here, as in other glands, there is produced a state of nodular hyperplasia which may extend to the formation of an adenoma.

Excessive cortical activity may also be manifested in an increase in the siderophile and pigmentary products. Frequently, but not always, all three forms of increased secretion are met with.

Finally, hyperepinephria manifests itself in the medullary substance by a distention of the chromaffine cells, which are well preserved and filled with epinephrin-generating granulations.

Hypoepinephria shows itself microscopically by changes of opposite nature. In the cortical substance the spongiocytic condition disappears; labile fat is no longer present; the cells, of which a few present a dichroic aspect or contain fixed fat, are for the most part small, shrunken, and with finely granular protoplasm; the pigment and siderophile substances are generally diminished; the nucleus is likewise small and dark, and the trabeculæ are often displaced.

In the medulla the chromaffine cells are sparse, wilted, and devoid of epinephrinogenous granulations.

Of these histologic features, some are readily recognizable in autopsy work on man; others are not there visible, by reason of cadaveric changes,

but can easily be demonstrated in experimental work. Sézary has shown that the histologic constitution of the adrenals can be predicted, in man, from macroscopic examination alone.

The structural changes in the adrenals are paralleled by perversions in its secretions, which, in turn, become manifest in clinically recognizable symptoms. The *adrenal syndromes* are three in number: (1) Hyperepinephria; (2) hypoepinephria, and (3) the melanodermic or pigmentary syndrome.

The *syndrome of hyperepinephria* consists essentially of the results of excessive secretion of epinephrin. The effects of cortical excessive glandular activity are not apparent clinically, only those of medullary excess being perceptible. The excess of epinephrin gives rise to three types of disorder, which, in fact, frequently occur in combination, viz., arterial hypertension, aortic atheroma, and glycosuria. These disorders were shown to occur, respectively, by Vaquez, Josué, and Blum. Post-mortem observations have revealed especially a cortical hyperepinephria in association with the first two conditions, but Wiesel, Vaquez, Aubertin, and Clunet have also detected distinct evidences of medullary hyperepinephria. Schur, Wiesel, and others claim to have demonstrated an excess of epinephrin in the blood of cases with hypertension, but the subsequent control observations have not all been confirmatory.

The arterial hypertension in hyperepinephria is generally evanescent at first, then undulant; finally it becomes permanent, and at this time causes such symptoms as vertigo, tinnitus, visual disturbances, headache, and epistaxis. Later, more serious manifestations appear, such as aphasia or transitory hemiplegia, convulsive seizures, and finally cerebral hemorrhage, acute pulmonary edema, or sudden death. Consentaneously with the varying development of these conditions is noted the oncoming of vascular sclerosis and cardiac hypertrophy.

With this syndrome of arterial hypertension is frequently associated interstitial nephritis, a condition which ordinarily provokes hyperepinephria (Dopter and Gouraud, Darré, Marassini). The hypertension in these cases does not depend entirely on hyperepinephria, but on other pathogenic factors.

Finally, hyperglycemia and at times glycosuria have been noted in subjects suffering from the vascular disorders of the syndrome of hyperepinephria (Weiland, Neubauer).

It is to be emphasized that only a certain number of cases of arterial hypertension or aortic atheroma are to be ascribed to excessive adrenal activity. Like symptoms may be met with in the absence of hyperepinephria.

The *syndrome of hypoepinephria* was first described by Sergent and the author in 1898. Its symptoms reflect functional disturbance, both of the cortical and medullary adrenal cells, and consist essentially of muscular asthenia—an expression of diminished myotonic functioning of the adrenals —and lowered arterial tension—an expression of their reduced angiotonic functioning. The muscular weakness, in its various modalities, is the principal symptom of adrenal insufficiency, and may even simulate actual

paralyses. The diminished vascular tension results in circulatory phenomena, such as tachycardia, arrhythmia, tendency to collapse and syncope, and peripheral vasomotor disturbances. Sergent's white line has been considered by him a pathognomonic sign, but recent authors have cast doubt on this. Adrenal insufficiency may also result in digestive disturbances (vomiting especially) and nervous disturbances, including mydriasis, headache, delirium, and even convulsive or apoplectoid seizures or coma (Sergent's adrenal encephalopathy). Finally, sudden death may also be caused by such insufficiency.

Hypoepinephria may present different modalities, according to the course of the adrenal disorder, which may be either chronic, subacute, or acute. The latter exhibits similarity to cases of poisoning, or at times peritonitis, cholera, or meningitis. Besides, there are met with, in infections or toxic states, more or less isolated and clearly discernible symptoms of hypoepinephria, which indicate the involvement of the adrenals by these infections or intoxications, especially diphtheria, scarlet fever, typhoid fever, erysipelas, and chloroform intoxication. Hypoepinephria has also been held directly responsible for certain conditions, such as constitutional angiohypotonia (Ferranini), the Erb-Goldflam syndrome (Raymond), and some neurasthenic or amyotrophic states.

The *melanodermic syndrome* is doubtless that which is least directly related to functional disturbances of the adrenals. It does not appear to be related to the pigment secretion in the cortical cells; it seems rather that the adrenals react on skin pigmentation through the intermediation of the sympathetic system, which normally regulates it. One can, indeed, describe a special sympatheticoadrenal apparatus, with several relays, constituted by the intra-adrenal nerve-cells, the periadrenal nerve-cells, and the extra-adrenal nerve-cells of the solar plexus. Whatever be the point which the morbid process attacks, the chromogenic function of the sympathetic reacts. Thus are to be explained cases in which the melanodermic syndrome has appeared as a sequel to lesions of the solar plexus, as well as those in which it follows adrenal changes. It does not correspond, however, with disturbances of the secretions of these glands, for it may develop where there is only partial, or even very slight, disease of the organs. It develops only in the presence of slow-going changes in them, never after acute destructive lesions. Finally, proof of its existence is supplied in experimental adrenal insufficiency. It is probable, however, that by virtue of the solidarity of the chromaffine cells and the sympathetic very special and intimate relations exist between the medullary adrenal cells and the nerve-cells, for adrenal administration is capable of alleviating and even curing the melanodermic syndrome.

This syndrome consists essentially of the discoloration of the skin and mucous membranes described by Addison, to which are often added epigastric and lumbar pains, indicating further its sympathetic origin. Clinically it is often witnessed for months or years when the lesions producing it progress slowly and fail to destroy the adrenals. Where, on the other hand, a

considerable amount of glandular tissue is destroyed, hypoepinephria adds itself to the melanodermic syndrome, the combination being known as Addison's disease. Adrenal tuberculosis oftenest gives rise to this condition, but it may also produce other disturbances, especially the acute syndrome of hypoepinephria.

ETIOLOGY OF ENDEMIC CRETINISM, CONGENITAL GOITER, AND CONGENITAL PARATHYROID DISEASE.*

By ROBERT McCARRISON, M.D.R.U.I., M.R.C.P. Lond.,

KASAULI, INDIA.

The author fed white rats (1) on the filtrate of an emulsion of goitrous persons' feces, and (2) on aërobic and anaërobic cultures of organisms grown from the feces of goitrous persons. A number of rats were also confined in dirty, unhygienic cages, which were grossly contaminated by their own alvine discharges, with a view to determining the influence of such conditions of life on the development of goiter. Among the animals treated in these ways were a number of adult females which developed goiter of greater or less degrees of intensity. These gave birth during the period of the experiment to 146 young. The fathers of these animals were also sufferers from experimentally produced goiter. Of the young rats 63 were removed from the cages for examination. Of 5 animals born in the filthy, unhygienic cages all showed signs of thyroid hyperplasia. The parathyroids were found in all 5 cases, and were not affected. Of 16 animals born of a mother which consumed the filtrate of an emulsion of goitrous feces prior to and during pregnancy, 3 were cretins, 7 had thyroid hyperplasia—in 2 of these there was also partial fibrosis of the thyroid—and 7 were normal, while 5, or 38 per cent., had congenital parathyroid disease. The clinical features of the 3 cretins were similar, namely, stunted growth, curvature of the spine, low weight, and defective powers of motion. The thyroid and parathyroid glands of the cretin which was examined were completely destroyed, the parenchyma cells being almost wholly replaced by fibroblasts. Of 17 animals born of mothers which consumed aërobic cultures on agar of fecal micro-organisms, 7 had normal and 10 markedly hyperplastic thyroid glands. The 10 animals having disease of the thyroid were born of two mothers which consumed fecal aërobes prior to *and during* pregnancy. The 7 animals having normal thyroids were born of one of these mothers which consumed fecal aërobes prior to *but not during* pregnancy. The noxious action of the bacterial cultures was thus demonstrated. The parathyroids were found in 11 out of the 17 cases and were normal in all. Of 25 animals born of mothers which consumed fecal anaërobes, 8 had normal or almost normal thyroids, while in 17 the thyroid gland was markedly hyperplastic. The parathyroids were diseased

* Summary of article in the Lancet, March 21, 1914.

in 10 out of 18 cases in which they were seen, or 55.5 per cent. The parathyroid disease consisted in marked congestion, hemorrhages into the gland which destroyed large portions of its substance, and fibrotic changes. Fecal organisms which grow aërobically on agar, while capable of causing marked hyperplasia of the thyroid gland, do not appear to be capable of producing any ill effect on the parathyroid glands.

Conclusions.—1. Of the offspring of goitrous parents a small percentage are born cretins, approximately 63 per cent. are born with congenital goiter, 32 per cent. are born with congenital parathyroid disease, and 33 per cent. are born with normal thyroid and parathyroid glands.

2. Cretinism and congenital goiter are due to the action of toxic substances derived from the intestines of the goitrous mother on the fetal thyroparathyroid mechanism. Cretinism represents the maximum, and comparatively rare, effect of these toxins; congenital goiter, their minimum, and comparatively common, effect. Between these extremes all degrees of thyroid involvement may occur with or without associated swelling of the gland.

3. Congenital parathyroid disease is due to the action on the fetal gland of the toxic products of organisms, present in the intestine of the goitrous mother, which are capable of growth under anaërobic conditions.

Abstracts from Current Literature on the Internal Secretions

A Summing up of the Goiter Question.—Various enlargements of the thyroid are the result of temporary excessive physiologic demands, as at puberty, in pregnancy, infection, menstruation, etc. Many goiters of the simple and mild exophthalmic type undoubtedly recover spontaneously and, in many instances, various forms of medical treatment may hasten the recovery and restoration of the gland to an apparently normal condition. Simple goiters of long standing are often thrown into degeneration by giving iodine, causing thyrotoxicosis, but not exophthalmos,—although some symptoms are the same in these two forms of toxic goiter.

Encapsulated adenomas and simple colloid goiters which have resisted treatment are in most instances best dealt with by removal of enough of the gland to extirpate the disease. In simple goiter the more enlarged lobe should be extirpated; encapsulated adenomas should be enucleated, and thyroids which are bilaterally enlarged should be subjected to double partial resection, with division of the isthmus.

Exophthalmic goiter is essentially a disease chronic in character, presenting exacerbations and ameliorations of symptoms extending through a period of months or several years. While the disease is amenable to surgical treatment by the removal of a large part of the hyper-

secreting gland, this procedure should by no means be considered emergency surgery, and during exacerbations all cases should be considered medical. Surgical treatment is indicated during the upward wave of improvement. Extreme conditions, especially dilatation of the heart, may require preparation medically before institution of operative interference, and this should be confined to a preliminary ligation of the left upper pole. Should reaction follow this, ligation of the right upper pole is indicated a week later, thyroidectomy being reserved until the patient has gained in weight, and general health. Otherwise thyroidectomy is done at a second operation.

In operating on the thyroid the best exposure is obtained by a curved transverse incision through skin and platysma between the anterior jugular veins, making a wide separation of the flaps, and a midline vertical division of the muscles to expose the thyroid. This division should be made high near the insertion, to break the line of the scar and preserve the function of the muscle. In some cases the wound may be closed without drainage, the cavity being filled with salt solution. As a rule, however, patients are more comfortable if drainage is instituted for twenty-four hours. A subcuticular closure of the wound with catgut, approximating the platysma muscle, secures an almost imperceptible scar. C. H. Mayo (New York Medical Journal, December 6, 1913).

* * *

X-ray Exposure of the Ovaries in the Treatment of Exophthalmic Goiter.—The apparent relationship of the reproductive organs and thyroid in women led the author to utilize the powerful action of the X-rays on the ovaries as a therapeutic measure in Basedow's disease. In each of the 10 cases in which the procedure was tried favorable results were observed. The most marked effects of the treatment were manifested by a gain in body weight, which took place in 8 of the 10 cases, and ranged in degree from 2.3 to 21 per cent. of the original weight (average, 11 per cent.). The 2 patients in whom a reduction in weight occurred instead had been under treatment but a short time. The exophthalmos was not influenced in one-half the cases, but in the other 5 it was more or less markedly diminished, in one instance even disappearing completely. The tachycardia was sometimes considerably lowered, at others to a less extent. It was particularly in the subjective state of the patients that the rays seemed to exert a remarkable effect. With the exception of but 1 case, which had had but 3 X-ray treatments, all the patients felt much better as a result of the procedure, the majority even resuming their previous occupations. A very favorable effect was exerted by the X-ray on the diarrhea, which in 3 instances ceased entirely after the first exposure. In short, aside from the goiter itself, nearly all the manifestations of Basedow's disease were favorably influenced by irradiation of the ovaries. In no patient was a complete cure effected; but judging from previous experience in the non-operative treatment of exophthalmic goiter, the author was led to conclude that, at least in the cases of moderate severity

(which include the large majority of patients), irradiation of the ovaries yields more certain and rapid effects than the measures customarily employed.

It might have been thought that combined irradiation of the ovaries and the thyroid itself would prove of advantage. Of 3 cases, however, which had been previously considerably improved by treatment of the ovaries and in which thyroid irradiation was then tried, 2 were made distinctly worse. Immediately after the first X-ray exposures of the thyroid the pulse rate rose, the body weight diminished, and the general condition of these patients was aggravated, while in the third case the condition remained stationary.

As for the mode of action of ovarian irradiation, the author is inclined to conceive of it as modifying their internal secretory function. The ovaries doubtless produce a substance which provokes in the thyroid functional modifications manifested as Basedow's disease. Under the influence of the X-ray treatment, this pathogenic factor would thus be overcome and thyroid activity resume its normal course. J. Mannaberg (Semaine médicale, June 11, 1913).

* * *

Fatal Acute Thyroid Enlargement.—The author examined the thyroid, thymus, kidneys, suprarenals, ovaries, and pituitary gland of a woman who had been naturally delivered of a normal male child. The following day severe bronchitis had been present, with marked dyspnea and inspiratory recession of the intercostal spaces. The neck measurement was given as 16 inches. The dyspnea and cyanosis had increased and death occurred the next day. An autopsy made twenty hours later showed acute bronchitis, but no laryngeal or tracheal stenosis. The thyroid showed regular enlargement and appeared to be solid except for one cyst 3 cm. in diameter on its posterior aspect. There were no hemorrhages into its substance. The thymus formed a long tongue-shaped mass, measuring 11 by 2 by 1 cm. The ovaries were normal in size and appearance; corpora lutea were present. Adrenals: The left measured 6 by 4 by 1 cm. and weighed 9.3 Gm. It was enlarged by a central adenoma. The right was normal in size and appearance and weighed 5.5 Gm. The pituitary measured 15 by 8 by 6 mm. Numerous sections were cut from different portions of the glands. The appearance of the thyroid was suggestive of the rapid formation of new colloid alveoli. Nowhere was there intra-alveolar cell proliferation such as is seen in exophthalmic goiter. No increased fibrosis was demonstrable, and round-celled infiltration and other signs of acute inflammation were absent. The thymus was normal. Kidney: The glomeruli were normal. The cells of the tubules were swollen; no excess of fibrous tissue present. Ovary: No increased fibrosis. Adrenals: Sections showed little deviation from the normal. Pituitary: The anterior lobe contained big eosinophile (pregnancy) cells in large numbers, arranged in groups surrounding a central cavity, as a rule, and most frequently found in the anterior part of this

lobe. The basophile cells were few. Large cells with protoplasm staining very feebly with any stain were frequently seen (exhausted secreting cells, or post-mortem change). The colloid was three or four times more abundant than normal. The pars nervosa had been invaded by the large eosinophile cells from the anterior lobe. White (Journal of Obstetrics and Gynecology of the British Empire, November, 1913).

* * *

Entrance of the Internal Secretion of the Pancreas into the Circulation.—Some years ago Biedl reported the frequent occurrence of glycosuria in animals in which, either by drainage to the exterior or by the obstruction of the thoracic duct, the lymph was prevented from reaching the general circulation. In apparent harmony with this are reported cases of chyluria, due to a rupture of the chyle-duct or cistern, combined with glycosuria. Such observations have readily suggested the conclusion that some secretory product of the pancreas essential for normal carbohydrate metabolism is carried into the blood-stream by way of the thoracic duct lymph-flow, and that, when the latter is diverted or interfered with, glycosuria results as the most prominent symptom of the lack of the pancreatic product. This is not the only interpretation possible, however. Nervous factors might also be drawn into the explanation of the glycosuria, as the result of operative interferences. Carlson and Drennan (Proceedings of the Society of Experimental Biology and Medicine, volume xi, page 71, 1914) have remarked that ligation of the thoracic duct may cause a temporary hyperglycosuria owing to injury of the liver by the edema from the back pressure of the lymph. Fistula experiments do not exclude a temporary glycosuria due to the operation and the anesthesia. Furthermore, Carlson and Drennan have carefully repeated, with negative results, Biedl's experiment in which a fistula of the thoracic duct was produced. By ligature of the jugular vein and anastomosis with the thoracic duct the lymph supposed to contain the pancreatic product was discharged into the external jugular, which was slit open and secured to the skin, allowing free escape of the lymph. The urine showed no sugar at any time.

Inasmuch as extirpation of the pancreas brings on diabetes in from six to ten hours, while complete elimination of the thoracic lymph for from thirty-two to thirty-three hours does not induce even mild glycosuria, it is evident that the internal secretion of the pancreas enters the blood directly and not via the thoracic duct. (Editorial, Journal of the American Medical Association, April 18, 1914.)

* * *

Pathogenesis of Goiter.—In the author's district goiter is widespread and endemic, but very mild. Analysis of an extensive material has convinced him that the goiter is the anatomic expression of an increased functional response to greater demands made on the thyroid from some cause. The gland responds by enlarging its secreting surface. There must be some endemic harmful influence against which the

thyroid seeks to rally all its forces. When they prove inadequate, cretinism or myxedema result. Animal food and protozoan affections make unusually great demands on the thyroid. The less vigorous the thyroid, the sooner it yields and enlarges, so that every goiter must be regarded as a sign of thyrasthenia. The thyroid in women has demands made on it in the course of the functioning of the ovaries and pregnancy, which co-operate to render it less resistant. This explains the larger proportion of goiters among women. The thyroid, adrenals, and hypophysis are in one side of the balance; the genital glands, pancreas, and parathyroid bodies in the other side. When one gland in each of these two groups becomes functionally deficient, the other glands in that group suffer with it. An unstable nervous system is liable to add its influence. This is the explanation for exophthalmic goiter the author believes. It is a neurosis, and may be correctly designated as neurotic thyreosis. Schiotz (Journal of the American Medical Association, from Nordiskt Mediziniskt Arkiv, vol. lvi; Internal Medicine, No. 2, 1914).

* * *

Pituitary Tumor and Sellar Decompression.—Report of a case of hypophysis tumor in which sellar decompression gave prompt but only temporary relief. Most pituitary tumors attain, before they cause definite symptoms, such a size that it is impossible to remove them through the floor of the sella. The authors, therefore, advocate decompression performed as follows: An incision is made in the exact middle line of the nose and carried clear back to the nasopharynx in this line, separating the two layers of the nasal septal mucosa, but not entering the nasal cavity. The middle turbinals are forced apart by pressure with a metal glove stretcher and the sphenoidal ostia thus exposed. The mucosa covering the anterior wall of the sphenoid is gently elevated to give a perfect view of the ostia. The floor of the sphenoidal fossa lies about 10 cm. from the junction of the nasal vestibule with the upper lip. A probe, marked at a point 10 cm. from its tip, if placed against the floor of the vestibule of the nose at the junction with the upper lip, and directed in a plane which corresponds with a line running from the nasolabial junction backward and upward to form a tangent with the lower and outer margin of the orbital cavity, will, when introduced for 10 cm., impinge upon the floor of the pituitary fossa. The floor of this fossa is then removed by chisel and burr, and the decompression readily effected. Wilfred Harris and Cecil Graham (Lancet, November 1, 1913).

* * *

A Pathologic and Clinical Study of the Thymus.—That the thymus is an indispensable organ in growing dogs seems to have been established. Thymectomized dogs grow abnormally fat and stupid, with alterations in the bones corresponding rather closely to those observed in rickets, and disturbances in the development of the jaws and teeth. A few dogs show convulsive conditions resembling tetany. Thymectomy causes a gradual decrease in the leucocyte count, while the ad-

ministration of thymus extract causes an increase. Disease or removal of the thymus causes a marked decrease in blood-pressure, rapidity of the pulse, and, finally, heart collapse.

Though closely parallel in their action, the thymus and thyroid cannot compensate for one another. Thymectomy causes a hypertrophy of the chromaffine cells of the adrenals and an excess of epinephrin in the blood. There is an antagonism between the sexual glands and the thymus. The development of the reproductive glands at puberty probably causes the involution of the thymus.

Of 56 patients operated on for tracheal stenosis due to enlarged thymus, 43 were completely cured by excision of all or part of the thymus. Many cases of infants dying at birth are due to hemorrhage into the thymus. This is much more frequent than is generally suspected. Defectively nourished children frequently show sclerotic atrophy of the thymus. This often coexists with congenital defects of various kinds and is frequently due to inherited syphilis, so that specific treatment should be given a trial in dubious cases. Cysts in the thymus sometimes cause sudden death from hemorrhage. Primary defective development of the thymus in childhood frequently coexists with abnormal mental states. The author suggests the importance of further research on the thymus to find out whether aplastic and hypoplastic conditions in this gland may not be etiologic factors in cretinism, mongoloid idiocy, and chondrodystrophic dwarfism. H. Klose (Journal of the American Medical Association, from Jahrbuch für Kinderheilkunde, December, 1913).

* * *

Pathology of the Thyroid Gland in Exophthalmic Goiter.—A detailed pathologic study of fixed tissue preparations from 1208 thyroids, removed from patients whose condition would ordinarily have been diagnosed as exophthalmic goiter, showed that 79 per cent. of the thyroids contained large areas of marked hypertrophy and hyperplasia. A parallel clinical study showed that for a period of three years all patients with true exophthalmic goiter, and from whom gland tissue was removed, fall into this list.

In the series of 1208 so-called exophthalmic goiters, plus 585 so-called simple goiters, or a total of 1793 thyroids, but 4 instances of marked primary hypertrophy and hyperplasia of the parenchyma were noted which did not show clinical symptoms of true exophthalmic goiter. Three of the 4 patients were children.

Twenty-one per cent. of the 1208 glands studied were either regenerations or adenomas. Clinically, while all of these were markedly toxic, all were chronic and none of them would now be grouped clinically as true exophthalmic goiter.

By assuming that the symptoms of true exophthalmic goiter are the results of an excretion from the thyroid, and by attempting to determine the amount of such secretion from the pathologic data, one is able to estimate in a large series of cases the clinical stage of the disease with

about 80 per cent. of accuracy and the clinical severity of the disease with about 75 per cent. of accuracy. It would, therefore, appear that the relation of primary hypertrophy and hyperplasia of the parenchyma of the thyroid to true exophthalmic goiter is as direct and constant as primary inflammation of the kidney is to the symptoms of true Bright's disease. L. B. Wilson (American Journal of the Medical Sciences, December, 1913).

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Intrapleural Injections of Epinephrin in Pleurisy.—Report of a series of about 20 cases of pleurisy in which injections of a 1 : 1000 solution of epinephrin hydrochloride into the pleural cavity constantly yielded such favorable results as to lead to his discarding all other methods of treatment in this condition, except surgical intervention where indicated. The amount injected was at first 0.3 c.c. (5 minims), and on the four or five succeeding days 0.2 c.c. (3.33 minims) in saline. As a result, the temperature would begin to descend on the third day and the effusion be rapidly absorbed, so that already by the tenth day the presence of fluid could only with difficulty be demonstrated. In dry and in purulent pleurisy the measure was also employed with benefit. Distinct improvement in the patient's general condition was among the additional favorable effects noted (Wedensky).

The same procedure was tried by another author in 6 cases of pleurisy with effusion, all in children ranging from 2 to 10 years of age. The dose used was at first 0.15 c.c. (2.5 minims) of the solution; this was later increased to 0.3 c.c. (5 minims) and in one case even to 0.5 c.c. (8 minims). Rapid absorption of the effusion followed, even in cases where previous exploratory puncture had shown little or no tendency to initiate absorption. In 2 cases of the series, perhaps because of somewhat excessive doses, a temporary acceleration of the pulse was witnessed under the influence of the epinephrin, together with well-marked diuresis and slight glycosuria. The number of injections varied from 1 to 6 and they were given every second or fifth day. Five patients recovered almost completely and in a short time—in eight to thirty days. The author strongly recommends it to the attention of pediatrists. Volkova (Pediatria, No. 6, 1913; Semaine médicale, September 10, 1913).

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The Ductless Glands.—The internal secretions exercise an apparently controlling influence on many of the organs, even to the extent of becoming responsible for the development of certain mental traits or personal characteristics which may make or mar the individual.

The hypophysis, as a whole, is a persistent organ and, therefore, must have throughout life a continued function. Extracts of the whole gland increase blood-pressure, cause uterine contraction, increase peristalsis, lower carbohydrate assimilation, and have a mydriatic effect. Used to excess, they cause emaciation, degeneration of the liver, and increased metabolism. Extirpation produces in animals a peculiar cachexia, reduced pulse rate and respiration, fibrillary tremors, and death, from apathy and

coma. The overgrowth of the pituitary sometimes occurring after typhoid fever, or its clinical evidences, is to be considered the result of toxins which stimulate its growth, as well as perhaps that of the epiphyseal bony borders, thus accounting for overgrowth after this fever. Something of the same kind is often seen after marriage, when the stimulation of the sexual glands seems to extend in a short time to the hypophysis.

Loss of the genital glands in youth leads to overgrowth of the truncal skeleton, while the cranium does not seem to grow so fast. The distribution of fat about the body is disturbed. Epiphyseal consolidation in those places where it naturally occurs least or last is delayed. This will account for the overgrowth, and it is not necessary to seek for its cause in the pituitary. The sexual glands, therefore, especially at puberty, exert a marked influence over the development of the bones during the last portion of adolescence. Roswell Park (New York Medical Journal, December 6, 1913).

* * *

Preliminary Ligation of the Thyroid Arteries in Exophthalmic Goiter.—For the past two years or more the author has tied the inferior in preference to the superior thyroid arteries, for the following reason: The cosmetic effect is better; the wounds made for ligation of the inferior arteries are partly outside of the field of the lobectomy operations; as the inferior thyroid artery is usually larger than the superior, the effect of the ligation may be greater; the location of the inferior artery is less variable than that of the superior, which is subject to great changes because of the inconstant position of the superior pole. The ligation of the inferior thyroid artery is done as follows: A transverse incision from 4 to 4.5 cm. in length is made over the tendon of the omohyoid muscle precisely in the line of the Kocher collar incision as contemplated for the subsequent lobectomy. The fibers of the sternomastoid muscle are separated in the line of the common carotid artery at the level of the omohyoid tendon. The thyroid lobe is exposed behind the posterior fibers of the sternothyroid muscle and drawn inward by a retractor designed for this purpose. The common carotid is retracted outward by a similar though somewhat shorter instrument, and the layers of the fascia covering the inferior thyroid artery are divided at the level of the omohyoid tendon. Dissection is then carried out solely with two long, delicate, blunt dissectors, for the artery is sometimes at a great depth (greatest when Graves's disease has been engrafted on a colloid goiter), and the space is only large enough, as a rule, to admit one finger between the deeply concave retractors. A special aneurism needle is used for carrying the fine-silk ligatures around the artery. The wound is not drained. W. S. Halsted (Annals of Surgery, August, 1913).

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Operative Treatment of Thyroid Insufficiency.—Thyroid grafting, according to the author, has little, if any future. Clinical and experi-

mental facts are reported, however, which suggest that an operation on the thyroid, even when it is not enlarged, might have an influence on the functioning of the gland, diverting it into a more normal course. Such a method is worthy a trial in myxedema with goiter, in endemic cretinism, and infantile myxedema. If the thyroid is enlarged, part of it might be removed; if not, the isthmus might be severed, or both might be done in endemic cretinism, as in this condition the isthmic portion of the thyroid is generally the part enlarged. Poncet had success with "exothyropexy" in the case of a girl of 14 with typical myxedema. Her physical growth was scarcely that of a child of 8, and the mental development still lower. The thyroid was abnormally small. He lifted it out of its bed and kept it exposed for a time, covered only with gauze. The wound was allowed to heal up after about a month, and the child developed much better afterward, the mental condition materially improving. This was also observed in Neudorfer's case, a complete transformation in character and in mental and physical development following an operation on a goiter in a youth of 19, extremely backward in both body and mind; similar benefit had followed an operation on a brother for goiter. Cathcart had also reported subsidence of myxedema after partial thyroidectomy in a woman with a goiter. The author has observed a complete transformation after a partial operation on the thyroid gland in 2 dogs with pronounced cretinism and goiter. Von Jauregg (Wiener klinische Wochenschrift, September 25, 1913).

* * *

Rachitis in the Offspring of Thyroidectomized Rabbits.—Report of the abnormalities of development observed in successive litters from a pair of rabbits both thyroidectomized shortly before the first copulation. Of the first litter of 8, 4 died rather suddenly about the twentieth day, with abdominal distention. The remainder, apparently normal up to the fifth week, then exhibited marked apathy and somnolence, muscular weakness, distention, and finally diarrhea. Three soon died, weighing only about as much as controls. The eighth rabbit showed temporary digestive disturbance, then grew normally. The second litter, born ten weeks later, showed a similar arrest of development, and but one survived. At autopsy the ductless glands were found practically normal. The osseous system, however, showed changes precisely corresponding with those of human rickets, including the rachitic rosary, marked lengthening of the distal, radial, ulnar, and tibial cartilages, scoliosis, curved sternum, rudimentary scapular spines, humeral curvature, contracted pelvis and cranium, with marked vascularity of the cranial bones, malformed teeth, and thickening of the epiphyses in general. The microscopic bony changes were also similar to those seen in human rickets. In a few cases there were added a slight rarefying osteitis or bone hyperplasia, and in the second litter changes suggesting a mild degree of achondroplasia. The parent animals exhibited no signs of myxedema, aberrant mediastinal thyroid tissue doubtless not having been removed.

The authors believe the changes observed in the offspring can be attributed mainly, if not wholly, to the parental thyroidectomy, and lay stress upon parental thyroid insufficiency—probably due to previous infections or intoxications—as a cause of rickets in human offspring. H. Claude and J. Rouillard (Presse médicale, March 21, 1914).

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Early Operation of Exophthalmic Goiter.—The author operated on 28 cases of exophthalmic goiter, in all but 6 of which the disease was severe. He insists on the necessity of educating general practitioners to realize the importance of an early operation in every case of exophthalmic goiter, as soon as the diagnosis is made. This puts an end to the excessive thyroid functioning before the resulting products have irreparably damaged the heart, kidneys, liver, lymphatic system, etc. The thyroid tissue is firmer and more easily operated on at this early stage, and the heart is in better condition. The results are prompt and permanent; especially noticeable is the rapid and complete subsidence of the exophthalmos. The author had 2 fatalities, both in long-standing cases. The patients were greatly frightened and both died before the operation proper was begun. He now refuses to operate when the patient is in such a fright. Those with vagotony seem to be in a more precarious condition than others, as also those at the height of intoxication —evident in the excitement and muscular weakness, while the more rapid pulse after slight exertion and a trace of dyspnea are signs of beginning exhaustion on the part of the heart. Under normal condition there is a difference of from 0.1° to 0.3° C. between the temperature in the axilla and rectum; when there is a difference of a whole degree chronic weakness of the heart is suggested. At the same time, extreme excitability seems to have a greater influence on the outcome than the state of the heart. E. Liek (Archiv für klinische Chirurgie, March 24, 1914).

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Exophthalmic Goiter and the Genital Sphere.—Menstruation was found normal in only 12 of 36 exophthalmic goiter patients; in 8 there was complete amenorrhea, which had persisted up to a year in the majority, and for twelve years in one woman of 47. In 8 women the menses had been much reduced; in 2 they had become excessive. Of the 36 women, 10 were virgins. Four were pregnant, and in 1, an iv-para of 36, the disease became much worse during the pregnancy. In another the disease seemed to have come on with the pregnancy, and in still another the heart disturbances became so serious that it seemed necessary to induce premature delivery. One woman, who had pronounced status lymphaticus and stenosis of the trachea, died during operative delivery. Only 1 of the 4 children seemed normally developed; 1 was prematurely delivered.

Disturbances in the genital sphere with exophthalmic goiter are too common to be merely casual. The onset of the Basedow disease, further is liable to coincide with puberty, pregnancy, or the menopause. In one

of the cases reported the first menstruation, at 18, occurred as the exophthalmic goiter first developed. In 2 cases the disease came on first during a pregnancy; similar cases have been reported by others. It seems probable that in certain cases the genital anomaly is the first to develop, and this starts up the exophthalmic goiter by its influence on the thyroid or on the sympathetic nervous system. The opposite is also known to occur. The exophthalmic goiter may thus be primarily thyrogenous, neurogenous, or ovariogenous, and treatment must be guided accordingly. Graff and Novak (Archiv für Gynäkologie, Bd. cii, Nu. 1, 1914).

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Dentition and Growth of Hair Under Control of Internal Secretions.—The author advocates systematic organ therapy during pregnancy in families which manifest a tendency to abnormal dentition and growth of hair. Tardy dentition should be regarded as a warning that the development of the body is not progressing as it should, and that the work of the internally secreting glands will have to be artificially supplemented to tide the patient along until normal conditions become installed. He does not attribute the trouble to any one gland, but to some disturbance in the functional balance of the whole ductless-gland system. Dentition was hastened and regulated by thyroid treatment in a boy of 14, backward in intelligence and physical growth. Numerous anomalies and delayed development were found in the teeth of a woman of 27 who had had myxedema since puberty. Three children in one family have numerous anomalies in dentition and growth of hair, and similar anomalies had been recorded in two preceding generations on the mother's side. Thyroid treatment of one of the children apparently had an important influence in stimulating and regulating the further growth of teeth, genitals, and hair. A. Josefson (Journal of the American Medical Association, from Hygeia, March, 1914).

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Diagnosis of Enlarged Thymus and the Symptomatology of Hyperthymatism.—One should be on the lookout for enlarged thymus in cases of asthma, persistent bronchitis, and laryngeal or tracheal stenosis. The enlarged thymus may be detected by the ordinary methods of physical diagnosis. Children with enlarged thymus present two fairly uniform sets of respiratory symptoms: Those due to pressure on the trachea, viz., cyanosis, slow, labored breathing, and supraclavicular and substernal retraction, and those presumably due to toxemia or hypersecretion of the thymus, viz., breathing of the asthmatic type, characterized by fairly easy inspiration and long, difficult expiration, accompanied by râles. Inasmuch as, in all cases treated, the symptoms disappear when the physical evidences of enlarged thymus disappear, there is a causal relationship between the enlarged thymus and the asthmatic symptoms, which are obviously not due to pressure, and therefore probably due to hypersecretion. Pressure symptoms and toxic symptoms may be com-

bined in the same case, but those of the toxic type are more constant. P. H. Sylvester (Boston Medical and Surgical Journal, April 2, 1914).

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Influence of the Thyroid on Pregnancy and Lactation.—That the thyroid gland, situated in the neck, should have any sympathy with sexual functions, if it was originally the gland concerned with digestion, is extremely unlikely, but, on the contrary, likely enough if it originated from a glandular organ in connection with the sexual structures of the paleostracan ancestors. There is clinical and experimental evidence of a connection of the thyroid with the sexual system of man and higher mammals through its secretion, in that a lack of thyroid secretion influences sexual activity adversely; that sexual activity, whether it be physiologic or pathologic, causes an overactivity of the thyroid, and that this hyperthyroidism constitutes an index to the toxemia of pregnancy to counteract which the thyroids raise their antitoxic protective power. There is abundant clinical evidence in support of the theory that what is termed a physiologic overactivity of the thyroid is a valuable safeguard against the toxemia of pregnancy. William M. Thompson (Surgery, Gynecology, and Obstetrics, August, 1913).

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Pineal Extract in Obstetrical Practice.—The author used this preparation in 54 cases. In 15 cases he did not reach his patients until the third stage of labor, when he witnessed an excellent effect in retained placenta and hemorrhage. The results were also excellent in the remaining 39 cases—not inferior to those obtained with hypophysis extracts, though in 11 cases the author was eventually compelled to use forceps.

In from three to five minutes after an injection of pineal gland extract, strong pains, with sufficient intermissions, ensue. These pains are more easily borne by the patient than those which have occurred before the injection. Pineal gland extract corrects functional disturbance of the uterus, and spurs the muscle tissue to the extent of its power. Injurious or unpleasant after-effects are probably rare. The use of pineal extract can, therefore, be recommended. Wolf (Deutsche medizinische Wochenschrift, August 7, 1913).

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The Thyroid and the Reproductive Function.—Enlargement of the thyroid was detected in 49 per cent. of 654 pregnant women examined. Only 21 of these women had noticed the enlargement before pregnancy. In 4 cases children of women with goiter were born with much enlarged thyroid. Albuminuria was found in 16.6 per cent. of 241 women with enlarged thyroid, and in 22.1 per cent. of 267 without. In 33 women with eclampsia, the thyroid was enlarged in 31 per cent. No evidence was found that the thyroid is liable to become enlarged at the menopause, or that there is any connection between myoma and goiter. Only 5 of the 112 women with uterine myoma examined had a goiter. Wertheim (Archiv für Gynäkologie, Bd. cii, Nu. 1, 1914).

Weight of Suprarenal Capsules in the Insane.—Weight of the adrenals estimated in 224 cases. Assuming their normal weight to be 15 Gm., it was found that in general paralysis, epilepsy, and dementia precox the average weight was increased, while in senile dementia, alcoholism, pellagra, mental confusion, and imbecility the weight of the adrenals was diminished, in the order stated. Thus the conditions in which the weight of the glands is greatest are those in which convulsions are common or, in the case of dementia precox, muscular contractions excessive (catatonia). The increased weight in these cases may represent a reaction of defense of the adrenals, these organs being charged, according to certain authors, with the destruction of toxins resulting from muscular activity. Parhon and Zugravu (Archives internationales de neurologie, November, 1913).

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Endocrine Tumors of the Appendix.—In cancer of the appendix there are two groups of cases: (1) Epithelioma of the ordinary intestinal cylindric celled type; (2) small adenomata or "carcinoid" growths, which staining with silver salts proves to be related to endocrine glandular structures of the walls of the small and large intestine, discovered by Schmidt and Ciaccio. The authors report 2 cases of the second type, of which they made a careful histologic study. Such tumors are certainly not confined to the appendix, and one may logically expect to meet with them wherever the endodermic epithelium of the alimentary tract contains argentaffin cells. Such tissue is homologous to the endocrine gland of the pancreas—the islands of Langerhans. A. Gosset and P. Masson (Presse médicale, March 28, 1914).

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An Operated Case of Tumor of the Hypophysis.—Stress laid on the many advantages which the transfrontal operation has over the transsphenoidal methods. The facility of exposure, the opportunity of determining with some degree of accuracy the extent of the tumor, the avoidance of such a contaminating influence as the secretion of the nasal mucosa, and the admirable cosmetic results—these and other minor considerations should be given credit when any comparison of methods is made. C. H. Frazier and J. H. Lloyd (Journal of the American Medical Association, November 1, 1913).

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Pathology of the Thymus.—The thymus may persist and become enlarged and yet its function be subnormal. The so-called status thymicolymphaticus is due, not to excessive thymus function, but to a constitutional abnormality expressed in disturbances of the whole internal secretory system, of which the enlargement of the thymus is only one of the manifestations. The hyperplastic thymus seems to have a toxic effect on the heart. In many cases of exophthalmic goiter enlargement of the thymus precedes the appearance of thyroid symptoms. C. Hart (Virchow's Archiv, Bd. ccxiv, Nu. 1, 1913).

Department on General Medicine

Cyclopedia of Current General Literature

Abderhalden Test in Mental Disease.—The author takes up the claims of Fauser as to the findings of the Abderhalden test in certain types of insanity, with special reference to dementia precox. After his own experience with the test in 106 cases he says, to summarize the results, that a sex-gland reaction may be obtained in nearly if not all cases of dementia precox at some stage or another, but that this action is not specific, as Fauser asserts. The reaction may also be obtained in other forms of insanity. Thus, either Fauser's rule has exceptions or the positive findings in manic-depressive insanity or paresis are due to errors of diagnosis or technique. The fact, however, remains that in dementia precox the positive reaction is the rule, while in the purely functional psychoses it is the exception. While one cannot, as yet, draw positive conclusions regarding the significance of the reaction in dementia precox, certain possibilities suggest themselves. One of these is that of a perverted function of the cells concerned in the production of the internal secretion of the sex glands. From the clinical side, the question suggests itself whether or not the reaction has any relation to the pathogenesis of dementia precox. Theoretically, this is perfectly possible. Granted that anti-sex-gland ferments do occur in the circulation in dementia precox, and that their presence is the outcome of the appearance in the circulation of an abnormal secretion or of abnormal cells, then one may also assume that digestion of these cells or cell-products will take place, and that all conditions are thus given for a chronic protein intoxication which might very well expend itself on the central nervous system. Should this be true, then one might also expect that the administration of sex gland to such patients would cause an aggravation of the patient's condition, while partial or entire castration, possibly combined with the transplantation of normal organs, might similarly be expected to have a beneficial influence. Thus, the problem is now open to investigation from many sides, and probably definite advances will soon be achieved. C. E. Simon (Journal of the American Medical Association, May 30, 1914).

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Appendicitis, Treatment of.—The author combats the policy of leaving the appendix unremoved in case of localized abscess which is apparently followed by the majority of surgeons. The reason usually given is that it is unsafe to separate the adhesions in searching for the appendix for fear of causing general peritonitis. The author himself followed this plan of incision and drainage until seven years ago. Since then he has operated in 501 cases of sharply localized appendicular abscess and removed the appendix in every instance, whether free in the abscess cavity or deeply buried by adhesions. The re-

sults are infinitely better than under the old plan of treatment. In the 501 cases 6 deaths occurred, 1 from cardiac thrombosis sixteen days after the operation; 2 from septicemia four and six days after operation; 1 from postoperative obstruction, twelve days after operation; 1 from secondary hemorrhage the third day, and 1 from unknown cause, no postoperative history being obtained. Not a death occurred from peritonitis. Since the adoption of the Fowler position and drainage of the peritoneal cavity by a large split rubber tube, inserted at the bottom of the rectovesical pouch, supplemented by saline proctoclysis, peritonitis has been robbed of its terrors. The thorough removal revealed many pus collections which would otherwise have been overlooked. The percentage of fecal fistulas was also small and the tendency to postoperative sepsis much less marked than when the appendix was allowed to remain. The procedure is not recommended to inexperienced operators, who need not be too eager to operate in acute suppurative processes within the abdomen, but with its general adoption the method will be found greatly preferable. Van Buren Knott (Journal of the American Medical Association, March 28, 1914).

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Argyrism from Collargol. — The author reports the case of a young woman, supposedly suffering from jaundice, which turned out to be argyrism following a course of collargol. A dose of 10 grains of hexamethylenamine, given for a coryza, caused a marked improvement in the patient's coloration. The suggestion is made that if there is found another unfortunate person with dark-bluish color from argyrism hexamethylenamine might be tried. A. M. Crispin (Journal of the American Medical Association, May 2, 1914).

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Bacterin Therapy in Skin Diseases. —While still ignorant concerning many fundamentals of bacterin therapy, one must admit that it is frequently of great service in certain diseases of the skin. Bacterins are very useful in acne, eczema, furunculosis, dermatitis herpetiformis, blastomycosis, ringworm, sycosis of the scalp, erysipelas, and seborrhea dermatitis. The colon bacterin may be of use on erythema multiforme and urticaria. In acne, eczema, furunculosis, and dermatitis herpetiformis it is allowable to start at once with stock bacterins; in other cutaneous disorders it is first necessary to identify the infecting organisms. Bacterins are only an aid and should never be used to the exclusion of all other remedies. The dosage and interval must be determined for each patient, care being exercised to avoid a "negative phase." Passive hyperemia should be induced after each injection. Bacterin ointments may be useful in some conditions. H. H. Hazen (Southern Medical Journal, March, 1914).

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Carbon Disulphide as a Therapeutic Agent.—If a small pledget of absorbent cotton be wet with carbon disulphide, placed on the skin, and at once covered with a silver quarter or dime, in a few seconds a sharp, burning sensation will be felt, which will increase momentarily till it becomes in half a minute as unbearable as the flame of a match. Four or five seconds after the coin and cotton are removed, however, so as to admit air to the skin, the

burning almost instantly ceases. Only a little redness and hyperemia of the surface remain for from a few minutes to half an hour, to show where the application has been made. No blistering follows, unless a very prolonged treatment—never necessary—is made. It is by reason of these qualities of very quick and very evanescent action that some peculiar therapeutic effects may be obtained with this agent. These are chiefly counterirritant, anodyne, and psychological.

Whenever an immediate counter-irritation is indicated, as in vomiting, the same effect will be produced by a quarter-minute's application over the epigastrium as by a strong mustard plaster after half an hour's use. The superficial capillaries may be distended almost instantly, to relieve stasis or congestion beneath any part of the skin surface. As an anodyne, carbon disulphide often promptly relieves neuralgias, headaches, and nearly all local pains. While the patient's interest is fixed and held by the new pain, the former one is forgotten. The stream of nervous energy that was overcrowding one set of neurons is at once diverted into new channels, allowing a period of rest for recuperation of the overirritable cells. Here one approaches the psychological effect induced by carbon disulphide, which is an important feature. To illustrate this, the author relates experiences of his own in which wry-neck, hysterical paralyses, etc., were relieved in a few minutes by application of carbon disulphide, together with well-directed suggestion. H. H. Seelye (New York Medical Journal, February 28, 1914).

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Congenital Cardiac Lesions, Diagnosis and Prognosis of.—The author remarks on the great difficulty of making a diagnosis of the exact lesion in any individual case, and on the uncertainty of the symptoms of any particular anomaly. He attempts to give guides from an analysis of 34 cases which he has personally observed. Functional murmurs due to anemia are decidedly rare under 4 years of age, but when present are invariably systolic in rhythm, loudest at the base, never conducted to the back, and usually disappear in the recumbent posture. A history of cyanosis, dyspnea, and palpitation during the early months of life is in favor of a congenital lesion, and this possibility is enhanced if there are other deformities present. Instead of cyanosis, an important sign of congenital heart disease, there may be extreme pallor, as was noted in 9 of the author's 34 cases. The cyanosis, too, may only appear later—the *"forme tardive"* of the French. Cyanosis, when evidence of acquired heart disease, is a late phenomenon, and is usually accompanied by edema and serous effusion, both of which are conspicuous by their absence in congenital heart affections. Murmur in congenital disease is, as a rule, loud, audible over a wide area, and at no one place can it be said to be of maximum intensity, whereas in acquired mischief the opposite is the rule. It is usually systolic in rhythm, and may be diastolic as well, but never diastolic alone.

A systolic murmur as loud in the interscapular region, and especially on left side, as over the precordium points to a *patent ductus arteriosus;* in *pulmonic stenosis* the murmur may be well conducted behind, but it is never louder there than in front; in *pure*

pulmonic stenosis the second pulmonic sound is almost or wholly inaudible, but where this lesion is complicated by a *patent ductus arteriosus* the second sound may be accentuated.

In 9 of the author's 34 cases a *defect in the interventricular septum* was diagnosed, and verified *post mortem* in 3 of them. In all a loud, rough, and practically continuous murmur was audible, with its seat of maximum intensity about the middle of the sternum and not conducted into the vessels of the neck. The cardiac sounds could be recognized distinctly, and the second pulmonic sound was of normal volume. In the cases (2 in number) in which this lesion was present alone, cyanosis was absent, whereas in 1 case, where pulmonic stenosis existed in addition, cyanosis was evident.

A *patent foramen ovale* does not allow of a definite diagnosis.

In *pulmonic stenosis,* met with 15 times in the author's series, the symptoms usually considered characteristic—early cyanosis, systolic murmur, with seat of maximum intensity in the second left interspace, and weak or absent second pulmonic sound—are seldom found in practice, because this lesion is hardly ever present alone. When accompanied by a patent foramen ovale, persistence of the ductus Botalli, or by a defect in the interventricular septum, the second pulmonic sound is still present or even accentuated. With a persistent ductus arteriosus the murmur is rougher, conducted into the vessels of the neck, and the second pulmonic sound is accentuated; percussion may reveal in the second left interspace an area of dullness, which X-ray examination has demonstrated to be due to the dilated duct.

So far as *aortic stenosis* is concerned, those cases with narrowing of the isthmus are alone of clinical interest. In general, the symptoms of stenosis of the isthmus are identical with those of acquired aortic stenosis.

For the diagnosis of *persistent ductus arteriosus* the following combination of symptoms is of value: A rough systolic murmur (when an aneurismal dilatation of the ductus develops a diastolic element appears), with its seat of maximum intensity at the sternal end of the second left interspace, and at times louder in the left carotid than in the right. Gerhardt has drawn attention to a small patch of dullness situated in the second left interspace, and capping the cardiac dullness.

So far as prognosis is concerned, it can only be said that when dyspepsia is marked the outlook is grave, and that when X-ray examination does not reveal any enlargement of the heart it is unlikely that the defect is of any severity. M. Abelmann (Ergebnisse der innere Medizin und Kinderheilkunde, Band xii, Seite 143; Glasgow Medical Journal, May, 1914).

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Constipation, Treatment of.—To cure and not merely palliate cases of constipation, one should be equipped with a good vibrator and knowledge of the best ways of applying it. Exercise, in the case of sedentary people, should be taken regularly for about half an hour morning and night, and, if it includes a rubbing of the whole body into a glow with a rough towel after sponging with cold or cool water, the cure will be the quicker

and surer, especially for persons with a poor circulation. The diet in stubborn cases must be as laxative as possible, including one or two glasses of water some time before breakfast, one at bedtime, and, besides, another at least three times during the day between meals. Fruit, fresh, dried, or stewed, should be taken as a part of nearly every meal, plenty of vegetables at one or two of them, and a bran muffin as well as a slice or two of toasted whole-wheat bread with butter at most of the meals. Liberal ingestion of olive oil on salads is often a valuable adjuvant.

Patients with an excess of hydrochloric acid can rarely be cured of constipation till this excess has been remedied. The opposite condition—deficient secretion of the acid of ferments—should also be corrected by supplying either these or the appropriate hormones. The bulky diet helpful in uncomplicated constipation must be modified or deferred in the more marked cases of gastric or intestinal dilatation until such faults have been measurably improved, though coarsely ground or finely cut agar-agar and purified petroleum preparations are frequently effective in spite of moderate dilatations or displacements, or even a kink in the small intestine. Agar-agar, added to one of the soups or purées and well stirred, can be made so palatable that comparatively large quantities can be eaten with the meals.

Kellogg points out that ordinary paraffin oil can be purified and made safe by agitation for a long time with water. Half a pint of paraffin oil or petroleum put in a 2-quart fruit jar with a quart of water and shaken for a couple of hours, then allowed to separate by standing, will be quite well relieved from the anthracin and other injurious toxics which it contains.

Both the agar and purified oil have proven extremely useful for stubborn cases in the author's hands. Boardman Reed (Southern California Practitioner, May, 1914).

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Decapsulation of the Kidney in Bright's Disease.—Report of a case of chronic interstitial nephritis in uremic convulsions in which, as a last resource, this operation was performed. The fatty renal capsule being found and opened, the kidney was incised from pole to pole, the capsule proper or fibrous capsule stripped off as far back as the pelvis on each side, and then, instead of Edebohl's technique of cutting away the entire capsule and passing a strong silk ligature longitudinally through the cortex or substance of the organs, which in the author's estimation would only further damage an organ which is already in poor condition, the whole capsule was cut away with the exception of a narrow strip on each side of the pelvis, about ¾ inch wide, left for the purpose of forming a cradle; for the suspension of the kidney a strong ligature was passed twice through each tag, the ends being carried through the adjacent muscles.

The right kidney in this case was found of almost abnormal dimensions and the capsule thin and adherent. The left kidney was somewhat smaller, irregularly indurated, and sclerosed. The wound closed by primary intention and healed in twelve days on each side. On the fourth day after operation, albumin and casts had completely disappeared from the

urine and its specific gravity had materially improved. The patient was discharged, having made an uneventful recovery, and the urine examined regularly up to the time of writing (nearly a year later). The specific gravity improved steadily to 1020; there are no casts, albumin, or cells, and the patient has gained 34 pounds. D. J. Lynch (New York Medical Journal, June 6, 1914).

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Diabetes, Disappearance of Sugar in, After Operations.—The disappearance of sugar in diabetics after certain pelvic operations is discussed by the author, who produces the reports of 4 published cases, and reports 2 of advanced prostatic disease with pronounced and severe diabetes in which all traces of sugar disappeared from the urine soon after operation. In both cases the absence of sugar was permanent. Spontaneous cure in diabetes has been known, according to Naunyn, but very rarely and only in traumatic or syphilitic diabetes of short duration. The wide distribution of the organs that may cause glycosuria in their pathologic condition might suggest that certain pathologic states of internal secretions of organs in the pelvis might disturb the glycogenetic function. Further speculation is hardly wise at present, but one inference is possible, viz., that diabetes must no longer be viewed as an absolute surgical barrier, at least for hysterectomy and prostatectomy, and that in some cases a possible cure may occur. E. H. Eising (Journal of the American Medical Association, April 18, 1914).

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Elephantiasis, Surgical Treatment of.—A case of elephantiasis successfully operated on by Kondoleon's procedure, with continuous postoperative improvement, is reported by the author. The enlargement was confined to the right lower leg and foot. The circumference of the calf was 22 inches, above the ankle 18 inches, and of the foot 14 inches. The skin was hard, thick, and rough and the diagnosis of elephantiasis unmistakable. For four days previous to the operation the man was put to bed; each day the leg and foot were scrubbed in a strong mercuric chloride solution, bandaged tightly with a canton-flannel roller, and kept elevated on pillows. As a result of this, the leg was reduced in size about 2 inches. A long incision was then made through the skin on each side of the leg, extending from the knee to the ankle. Wide retraction of the integument was secured by dissecting it back freely from each edge of the incision. Going from above downward, the deep fascia to the width of three fingers was dissected off the muscles and cut away in one piece. Also, the same area of subcutaneous tissue was removed by splitting it off the skin. The muscles were laid bare and free hemorrhage occurred, requiring many ligatures. The skin was stitched back in position, dressings applied, and the leg bandaged without a splint. Auxiliary treatment consisted in the hypodermic administration of thiosinamine every three days over a period of two weeks. About three months later an intravenous injection of salvarsan was given empirically to combat any possible microbic or parasitic infection. The principle involved in the Kondoleon method is that by removal of the deep fascia there is brought about an anastomosis between the deep and

superficial lymph-spaces. The foot in this case is still enlarged and another operation is recommended, provided it can be performed without injury to the tendons. H. A. Royster (Journal of the American Medical Association, May 30, 1914). * * *

Formaldehyde.—Formaldehyde is rapidly absorbed from all parts of the gastrointestinal tract and lungs, and may be excreted again by them. It is rapidly oxidized in the body to formic acid and carbonates. There is also a small amount of a dialyzable compound formed in the blood, which is most probably hexamethylenamine, since the latter is found in the urine (bromine test). Small amounts of formaldehyde may pass through the body without causing apparent inflammation, while larger amounts always cause some. Recovery from severe inflammatory reactions may be rapid and apparently complete.

Formaldehyde depresses the heart by direct action. Its action on respiration is transient and apparently the result of irritation, though the quick oxidation would account for some of the increase. It causes a stimulation of the intestinal movements which in large doses is extreme.

The antiseptic action of formaldehyde is apparently due to fatigue, exhaustion, and a final firm combination with the drug. There is nothing to indicate that the drug has a field of usefulness in medicine other than for local use.

Morphine and ammonia are antidotes. Hugh McGuigan (Journal of the American Medical Association, March 28, 1914).

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Gall-stones, X-rays in the Diagnosis of.—The authors began to find the shadows of gall-stones by accident during the course of bismuth examinations of the alimentary tract. They have now adopted the routine of examining the gall-bladder in every patient before giving the bismuth meal. Pure cholesterin stones do not interrupt the X-rays to any appreciable degree, so that shadows of them cannot be distinguished. But such stones are not common, or at least do not cause many chronic disturbances. When the gall-bladder is chronically inflamed the stones deposited have lamellæ of calcium and bile salts encrusted on the cholesterin core. The calcium ingredient is shown by the X-rays. In nearly every case of symptoms referable to gall-stones there is some calcium. The author's technique for demonstrating gall-stones is as follows: The patient lies upon a table, face down. The plate is placed under the right hypochondriac region. The maximum of definition is obtained with a very small diaphragm, 1½ inches in diameter, and a very small cylinder placed close to the back. It is preferable to use a fairly soft tube with a rapid exposure. In the gall-stone shadows often there is a central light area with peripheral calcium shadow. Occasionally irregular deposits of calcium corresponding to the lamellated structure may be made out. As a rule, the faceted outlines are clear, but a shadow suggesting a single mass may be due to closely packed gall-stones. Evidences of gall-bladder disease are usually shown at the subsequent bismuth examination in the form of signs of pericholecystitis. Gall-stones may be distinguished from renal calculi by taking plates with the patient lying first on

his abdomen and then on his back. Gall-stones are nearer to the anterior abdominal wall; therefore the anterior plate will show the shadows small and sharp, whereas the posterior will show them large and blurred. The reverse holds in renal calculi. Calcified mesenteric glands will be found to occupy different positions in different plates on manipulating the abdomen between the exposures. A calcified costal cartilage will be continuous with a rib. A. W. George and I. Gerber (Boston Medical and Surgical Journal, April 30, 1914).

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Head Injuries, Diagnosis and Treatment in.—Of 298 cases of head injuries reported on, 130 were fractures, 22 gunshot wounds, 15 cerebral concussions, and the remainder severe scalp wounds. Of the fractures, 72 involved the vault and 58 the base; the mortality in those of the vault was 64 per cent., in the basal fractures 56.9 per cent. Whenever, in fracture of the vault, a depression existed or there was a linear fracture in the neighborhood of a meningeal vessel with focal symptoms or coma, a decompression was done. In basal fractures the diagnosis was based upon the presence of blood in one of the cavities of the head, confirmed in most instances by spinal puncture, the latter being a routine procedure in every suspicious cerebral case. In basal fracture the treatment was expectant, except where there was also a depressed fracture of the vault. Spinal puncture, intelligently used, accomplished about as much as a decompression operation in these cases. The 15 cases of concussion all recovered. Of the 131 cases of scalp wound, 11 were admitted for the treatment of infection alone. Most of the remainder were partly under the influence of alcohol, and 10 of these developed active delirium tremens, 3 dying. Of the 14 cases of penetrating gunshot wounds, 12 died of tetanus.

Death in head injuries is believed by the author to be due to either surgical shock, meningoencephalitis, or bronchopneumonia. Spinal puncture is advised in all doubtful cases. It is never a dangerous procedure, except in brain tumors and in acute hydrocephalus with tuberculous involvement of the aqueduct of Sylvius. Withdrawal of 15 to 20 c.c. is sufficient. The control of the procedure by watching for a fall in the blood-pressure he has found of no value. The X-ray is of value only in the hand of an experienced operator. As a rule, at least 4 views of the cranium should be taken, and at times 6 to 10. A depression is rarely shown. Where it is thought advisable to attempt the removal of bullets, the X-ray plates and localization should not be over an hour old, as it is by no means uncommon for bullets rapidly to gravitate considerable distances. Probing of recent wounds for diagnostic purposes is dangerous and illusory. Instead, one should cut down on the skull and directly inspect. In acute traumatic cases no incision in the dura large enough to require suturing should be made for exploration. If there is increased tension or absence of pulsation small linear punctures should be made. If blood is then found the incision can be enlarged. W. J. Anderson (Surgery, Gynecology, and Obstetrics, April, 1914).

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Insolation, Treatment of.—Treatment of an attack of insolation is one

that combines refrigeration with elimination, both active enough to produce good effects, without embarrassing organs, such as the heart, which are already damaged. To accomplish the former, ice-cold packs or baths are given. For the latter, recourse is commonly had to stimulants, but this seems not to be best, except as a last resort. Stimulation of an already burdened organ can do little good. Hydrotherapeutic methods are more useful in insolation than drugs. Ice packs or iced baths have a great value, but should not be continued for more than a few minutes at a time and should be discontinued when the rectal temperature has reached 104° F. To replace the water lost to the body before the attack, and to increase elimination, saline infusion is indicated. If it is true that the oxygen content of the body is low and the acid content high, such solutions should be alkaline. Those recommended by Fischer are extremely efficacious, whether given by rectum or intravenously, in neutralizing acids and increasing elimination. The solution for rectal use should be as follows:—

℞ Sodium chloride, 30 Gm.
Sodium carbonate (crystallized), 20 Gm.
Water, 1000 c.c.

(If the crystallized sodium carbonate is not available and use must be made of the ordinary dried form of the salt, the amount indicated in the prescription given above should be divided by three.)

The time consumed in injecting a liter should not be less than one hour. For intravenous injection the following solution may be used:—

℞ Sodium chloride, 14 Gm.
Sodium carbonate (crystallized), 10 Gm.
Water, 1000 c.c.

This also should be given very slowly. (The carbonate cannot be boiled. The salt solution should, therefore, be made first and the crystals of carbonate then added.) The effect of these solutions upon the secretion of urine is remarkable, and, as a rule, they render unnecessary the use of digitalis. When this latter drug is used, it should be carefully administered and its effects watched. Strychnine is not advised in the active stage of the disease.

Such treatment will dispose of the immediate danger. The treatment is then symptomatic. Headache may be treated with acetanilide, acetphenetidin, or salicylates, with due caution. Sleeplessness may be controlled with bromides, trional, or other mild drugs.

In apyrexial heat exhaustion external hydrotherapeutic measures are uncalled for. The internal hydrotherapeutic methods should be very useful in these cases, however, and should be combined with friction, massage, and warm packs, together with sufficient internal stimulant medication. P. G. Woolley (New York Medical Journal, June 13, 1914).

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Lymphosarcoma, Coley's Fluid in.—The author reports the case of a man who had had a soft, rounded, fairly movable tumor beneath the left sternomastoid removed by operation, and in whom recurrence took place rapidly, the pathologic report showing that the growth was a lymphosarcoma. After partial removal recurrence again took place. Injection of Coley's fluid was begun, the initial dose being ½ minim (0.03 c.c.). This amount was gradually increased for three weeks, an injection being given

each day. In three weeks the amount given daily was 10 minims (0.6 c.c.), and this was continued for two more weeks. A well-marked reaction with inflammation followed each injection. Except for the first few days, all injections were made into the tumor itself. The latter stopped growing in a week, and then began to diminish in size, though this was masked to some extent by the local inflammation and thickening set up by the injections. After the injections were stopped the swelling subsided, and in a few days nothing could be felt of the tumor. A further course of injections was given for a month, 10 minims being administered on alternate days, and the patient was kept under observation for two months. A year later there was no sign of recurrence and the patient appeared to be in perfect health. Spencer (Journal of the Royal Army Medical Corps, January, 1914).

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Malaria, Treatment of.—Quinine is destructive to the asexual cycle of malarial plasmodia, but neither quinine nor any other known drug is known to have the slightest destructive effect on the sexual form of the parasite. The amount of quinine necessary to kill all asexual plasmodia in the circulating blood does not exceed in any case 30 grains during each twenty-four hours. Tertian plasmodia are nearly always killed by 20 grains per day and sometimes they may be killed by a much smaller quantity. Since 30 grains per day are not intolerable to almost any adult, this amount should be administered in all except perhaps very exceptional cases. It will destroy all asexual parasites in the blood during the given day, but does not reach the parasites lodged in the capillaries. These do not remain in the capillaries, however, longer than forty-eight hours. Therefore, if 30 grains of quinine are given during each of two full days it is likely that all asexual parasites will be killed. It is probably better to continue the quinine for one more day in order to catch any parasites that, by chance, may have escaped. One can make a dogmatic statement, then, that all asexual plasmodia of any species will be killed by 30 grains of quinine daily for three days.

Whenever unfavorable conditions appear the parasites develop the more resistant sexual form and reproduce sexually. These sexual forms are developed, however, only when the unfavorable influence is insufficient to be destructive. If one takes a patient with estivoautumnal malaria whose blood contains only asexual parasites and gives him a small amount of quinine (2 to 5 grains) daily, after a few days large numbers of crescents and ovoids, sexual forms, appear in the blood, and actually increase in number for some time. If, on the other hand, 30 grains are given daily for three days no sexual parasites develop. Thus, small doses of quinine should not be given in malaria; large doses are always indicated.

Most cases of malaria have in their blood more or less numerous sexual plasmodia, and, since the three days' quinine treatment does not destroy these, they remain to be reckoned with. There is some kind of reproduction of sexual parasites in the body of man (not now well understood) which takes place in seven and multiples of seven days. This gives

rise to the relapses that occur on the seventh, fourteenth, twenty-first, and sometimes twenty-eighth days. These sexual parasites must either reproduce or die of age. It has not been definitely determined how long they may live without reproducing, but it is probably between two and four weeks. Though neither quinine nor any other drug will kill the sexual parasites, a proper amount of quinine will kill their products of reproduction. All that is necessary, therefore, entirely to sterilize the blood of a patient is to give him 30 grains of quinine on every seventh day for four weeks or longer. Perhaps it would be better to give it for six weeks in order certainly to catch any parasites that may have escaped.

Dogmatically, one may say that every case of malaria (except moribund cases) will be cured and the blood sterilized of plasmodia by 30 grains of quinine daily for three days, followed by 30 grains on the same day of the week on which the last of the three days fell, for a period of six weeks.

It is a matter of choice as to the number of doses into which the daily 30 grains are to be divided. Probably there is no difference in the effect on the plasmodia whether it is given in one or more doses. For the comfort of the patient it is probably best given divided into 3 or 4 doses at appropriate intervals. As to the form of quinine to be employed, no more effectual form for administration by mouth is necessary than the ordinary sulphate. It is far superior to some of the other salts. Quinine is never absorbed from the stomach until it is in solution, but quinine in solution is a very bad dose and should never be given. The solution should be made in the stomach, either by exciting the flow of gastric juice or by administering a little hydrochloric acid.

Occasional cases of malaria are met with in which a very large proportion of the red cells are infected. Life may be considered as depending upon immediate introduction of quinine into the blood. It takes quinine two to eight hours to reach its maximum concentration in the blood when administered by mouth. In such instances one may resort to the intravenous route. A soluble salt, usually the hydrochloride, well diluted with salt solution, is to be selected. Ten grains at a dose will kill as many plasmodia as any larger dose. Twenty grains at a dose are not without danger to the patient, and much larger doses intravenously are likely to be destructive. There is no necessity to repeat the dose oftener than every eight hours, and the drug should be given intravenously only until it can be given by mouth. Quinine intravenously is indicated chiefly in comatose or cerebral malaria. In this form anemia of the brain and coma are produced by the large number of parasites lodged in the grain capillaries. They remain here many hours, some as long as thirty-six hours, and are entirely beyond the reach of quinine in the blood until they segment. The author believes that nitrites (amyl nitrite) would tend to dislodge parasites from the cerebral capillaries and thereby relieve, to some extent, comatose or cerebral malaria. Best results would probably be obtained if some quinine had been introduced into the blood previously in order to destroy the parasites when dislodged.

The slowness and uncertainty with

which quinine, when given hypodermically, is absorbed make it unreliable. If a patient must have quinine at once it should be given intravenously, or if he can wait a few hours it should be given by mouth.

Malarial hemoglobinuria does not require quinine during the attack, because the very condition which produces the hemolysis and consequent hemoglobinuria destroys the plasmodia. Quinine increases hemoglobinuria. After the acute attack the weekly administration of smaller doses of quinine always kills out the remaining sexual infection. C. C. Bass (Southern Medical Journal, May, 1914).

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Night-sweats, Treatment of.—The author's work was undertaken in order to determine the relative merits of 3 drugs in the control of night-sweats, viz., atropine, agaricin, and aromatic sulphuric acid. Eighty-one cases were studied, of which 51, or 62.9 per cent., had night-sweats. Eight cases were classed as incipient, 25 as moderately advanced, 15 as far advanced, and 3 not classified.

Forty-nine patients were questioned as to the time when the sweats occurred; in 5 the sweats were irregular in appearance and occurred either by day or by night; in 16 they occurred between bedtime and midnight, and in 28 between midnight and morning.

Five patients were treated with agaricin. The dosage was $\frac{1}{12}$ grain given at 8 P.M. and in a few cases repeated at midnight. Of the cases in this group, 1 was classed as moderately advanced and 4 as far advanced. In 1 moderately advanced case the sweating was controlled; in 1 far advanced case, not controlled.

Nine cases were given atropine in the dosage of $\frac{1}{120}$ grain at 8 P.M., and in 2 cases repeated at midnight. The results showed: Moderately advanced cases: Controlled 2; not controlled 1. Far advanced cases: Controlled 2; not controlled 4.

Fifteen cases were given aromatic sulphuric acid. The dosage was 10 drops at 8 P.M., repeated in 6 cases at midnight. The results were: Incipient cases: Controlled 1; not controlled 0. Moderately advanced: Controlled 4; not controlled 1. Far advanced cases: Controlled 4; not controlled 3. Unclassified cases: Controlled 1; not controlled 1.

The patients receiving agaricin were under treatment with this drug for an average of fifteen days each. The group receiving atropine were under treatment for an average of thirty-eight days, while those receiving aromatic sulphuric acid averaged but twenty days.

From the data at hand it would appear that the best results are obtained by the use of aromatic sulphuric acid. The drug is evidently of value and should be given a more extended trial. W. M. Adams (Albany Medical Annals, February, 1914).

* * *

Novocaine as a Local Anesthetic.—The author reports the results obtained in the Mayo Clinic with the use of novocaine during the past year. The safe maximum dose of novocaine has been stated to be about 7 grains. The duration of the anesthesia when the drug is used without an adjuvant is fifteen minutes (Hertzler), but the action is more prolonged when epinephrin is added.

A ½ to 1 per cent. solution can be used in almost unlimited quantities

without fear of ill effects. This permits a wide infiltration of the operative field with liberal blocking off of the sensory nerve supply, which is not permissible with cocaine unless the latter be used in such large dilutions that the anesthesia is dependent to a considerable extent on the edema produced and not on the cocaine. Novocaine solution can be boiled without affecting its analgesic property.

The largest group in the Mayo Clinic series operated under novocaine is made up of cases in which the operation entails no exploration, is expected to be simple, and not prolonged. In this group belong the ligation of arteries, particularly of the thyroid, removal of small breast tumors, superficial cysts, lipomas, circumcision, paracentesis, external hemorrhoids, drainage of abscesses, excision of isolated glands and specimens of tissue for diagnosis, tonsillectomy in the adult, and various operations on the nose and throat.

Another group is composed of cases in which the general inhalation anesthesia is preferable, but might, for some reason, be deleterious to the patient. In this class are patients with recent acute conditions of the lungs, alcoholism, nephritis, myocarditis, etc., or any complication which renders ether not necessarily prohibitive, but rather inadvisable. Under these circumstances, hernia, hydrocele, varicocele, tuberculous epididymitis, varicose veins, and similar conditions are very satisfactorily operated on under local anesthesia. In operations on the thyroid where there is present an unstable nervous system and marked degenerative change in the heart and kidneys local anesthesia is also preferable, unless there is an apparently unreasonable degree of mental excitement.

The advantages of a combined anesthesia are particularly applicable in surgery of the thyroid when the condition of the patient indicates that the smaller the quantity of ether used the better. It is satisfactory in these cases to make the skin incision and divide between the muscles in the midline, if necessary cutting the sternohyoid and sternothyroid, under local anesthesia. An excellent exposure of the gland can thus be obtained painlessly. After beginning the actual extirpation of the gland, it is well to allow the patients to decide whether the pain is unbearable; if so, a few inhalations of ether will quiet them and enable the operator to remove the portion of thyroid necessary.

During the past year several abdominal operations have been performed under novocaine alone in the clinic, among them being appendectomies, gastrojejunostomies, gastrostomies, cholecystectomies, and the removal of ovarian cysts. A chronic appendix can be satisfactorily removed through a split-muscle incision if it is not markedly adherent. On the other hand, should old, firm adhesions be present and considerable traction necessary to free the appendix severe pain will be produced, which cannot be controlled by any method of injecting an anesthetic.

The methods found satisfactory in preparing and using novocaine were as follows: Enough of a ½ or 1 per cent. solution is made by dissolving the novocaine in sterile water. This solution is boiled for two or three minutes, and epinephrin is added. A

fresh mixture should be made for each operation.

In acute abscesses, superficial growths, and lipomas it is best to encircle the field of operation at the base with a substantial infiltration, then wait five or ten minutes before proceeding with the operation. In the majority of instances this gives absolute anesthesia. For ligation of the superior thyroid vessels, injection along the line of incision of about 15 c.c. of the solution, 10 cm. posterior to the outer limit of the proposed incision, to block off the superficial cervical nerves in that region, and another 5 or 10 c.c. deeply around the superior pole of the gland, usually gives a perfect anesthesia despite the fact that these patients are extremely irritable mentally. For thyroidectomies the same general plan is followed except that the deep injections around the gland when it is exposed are not employed. In herniotomy, after the inguinal canal is opened, the cord and sac should be infiltrated as high as possible. The separation of the sac can then be accomplished within a few minutes with very little pain, and a high removal done with surprising ease to the patient. In intra-abdominal work it is simple enough to cut through the abdominal wall to the peritoneum without producing pain, but anesthetizing the latter is difficult and oftentimes inefficient. In the more extensive types of operation morphine, $\frac{1}{6}$ grain, either alone or, in the case of the hyperplastic goiters, combined with $\frac{1}{200}$ grain of scopolamine, was given. D. C. Balfour (St. Paul Medical Journal, February, 1914).

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Potassium Mercuric Iodide Solution, Uses of.—The formula of a 1 per cent. solution of mercuric iodide in potassium iodide as used by the author is: Mercuric iodide, 1 Gm.; potassium iodide, 4 Gm.; distilled water, 100 c.c. This solution may be kept for months without change. The liquid is clear, of metallic taste, and irritating to the mucous membranes. If the local irritant effect is overcome by dilution, comparatively large amounts may be taken internally without producing severe symptoms. On a number of cases in which the drug was pushed, from 5 to 7 drops of a 1 per cent. solution was the limit of toleration, while from 15 to 18 drops of the same solution could be borne if well diluted.

Taken internally, the compound seems to have a marked effect on all catarrhal conditions of the mucous membranes, clearing up the common cold, apparently shortening the course of croup, and modifying acute infections of the nose, throat, and bronchi. This conclusion was reached after careful observation and repeated trial. Nearly all patients with catarrhal conditions remark that it gives them great benefit in freeing the sticky mucus. This is particularly true in acute bronchitis. In cases of gastritis and enteritis exhibiting much mucus the same effect was noted. The drug further acts as a mild stomachic if used in careful dosage.

Locally a beneficial effect was often noted in atrophic rhinitis. In a number of cases of acute frontal sinusitis marked relief was noted because of the free rhinorrhea set up. The free outpouring of thin mucus sweeps before it the thick secretions that have accumulated in the blind cavities. In syphilis, psoriasis, cryptogenic infections of the skin, and lupus the French have long been partial to

potassium mercuric iodide, using it both internally and as an ointment.

It is as an antiseptic, however, that the field for this compound is greatest, for in great dilutions its local effects and toxicity are insignificant, while its germicidal qualities remain high. A 1 per cent. solution has but slight irritant action, while a dilution of 1:80,000, or nearly one one-thousandth of 1 per cent., exhibits marked germicidal powers.

Cases of erysipelas, acne, and pustular infections of the skin of all varieties show remarkable results under its use. The purulent discharge in minor surgical cases, such as infected burns, old leg ulcers, and ragged wounds, is rapidly cleared up. Even when the affection is somewhat subcutaneous, as in felons and boils, when there is as yet no pointing or definite formation of pus, a wet dressing of 1 per cent. potassium mercuric iodide will usually reduce the course of the case and frequently abort it altogether.

For the sterilization of instruments the drug is excellent, except for its tendency to tarnish when left in contact too long. This can be easily overcome by the addition of a little sodium bicarbonate. Douglas Macfarlan (Journal of the American Medical Association, January 3, 1914).

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Prostatic Obstruction, High-frequency Spark in Treatment of.—The method discussed consists in the destruction of prostatic tissue by direct contact with the high-frequency spark, the current being applied by means of an insulated wire (usually No. 5, steel) introduced into the bladder through the cystoscope, in the same manner as originally employed by Beer in the destruction of vesical papillomata. Previous to the introduction of the cystoscope, the mucous membrane of the bladder and urethra is rendered anesthetic by the instillation of a 4 per cent. solution of novocaine in 1:16,000 adrenalin, which is allowed to remain in the bladder for one-half hour.

The wire is by means of the deflector held tightly against the tissue to be destroyed. As a rule, $\frac{1}{10}$-inch spark in the muffler is sufficient, and the spark should be tested before using the current in the bladder. The wire is usually allowed to lie in position until the bubbles cease to form. This usually requires about one minute, and is a long enough application for one area. The destruction of tissue for this length of time, with the current stated, extends about $\frac{1}{4}$ inch below the surface. As many applications should be made as the patient can take without causing severe pain or too deep destruction of tissue. The insulation burns off the wire, necessitating the withdrawal of the wire after each application, cutting it off flush with the insulation and reintroducing. The field fills with bubbles, requiring the injection of an ounce or more of fluid through the side cock, which clears the field at once. Bleeding is almost never seen, if manipulations are carefully executed.

The advantages are that the cause of the obstruction is removed under the eye without pain, reaction, infection, loss of function, hemorrhage, or incapacitating the patient. There is no ulcerated surface left; hence no cause for cicatrization.

The author's cases of small, fibrous prostates, median bar elevations, and

small lobe obstructions, without general enlargements, have been symptomatically cured by the measure. Cases of obstruction from a collar of prostatic nodules, without lateral lobes, were completely relieved where the tone of the bladder was fair, and improved even where the bladder wall was atonic. Cases of general adenoma in which open operation was contraindicated were greatly improved. H. G. Bugbee (Medical Record, February 14, 1914).

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Raw Surfaces in the Peritoneum, Management of.—It is essential that all raw surfaces in the peritoneum be covered or protected. The best method is to bring the edges together with a running suture, and, if time permits, to use a second suture to re-enforce and cover the first. The use of sutures is not applicable in over 50 per cent. of cases, and in these cases preference should be given to the peritoneal or omental grafts. In cases of general peritonitis associated with raw surfaces time is an important element and a finished technique unwise. In this class of cases warmed camphorated oil, 1 per cent., is indicated. The method of Richardson (covering with a leaflet of mesentery) should be used in cases with raw surfaces on the intestine, provided the intestine has a mesentery sufficiently long. Summer's method of using the sigmoid to cover raw surfaces in the pelvis is indicated in a small proportion of cases. All oozing surfaces should be touched with alcohol or the cautery to prevent infection. Sterile petrolatum has an inhibitory influence on adhesions, and if time does not permit of other measures it should be used. L. E. Burch (Southern Medical Journal, May, 1914).

Sarcoma of the Nasopharynx, Radium Treatment in.—The author reports the case of a male aged 22 who had first noticed a "blocking of the nose" four months before. There was no headache nor any pain in or around the nose. The soft palate was pushed forward into the mouth, and was almost vertical in position. Behind and reaching just below its free margin a large tumor could be seen which completely filled the nasopharynx, and the lower rounded border of the mass presented a grayish-white ulcerating surface, from which blood oozed freely upon manipulation. Digital examination showed that the tumor had a broad base, which occupied the whole posterior wall of the nasopharynx, the only free portions being its lower rounded surface and that which was in contact with the soft palate. A large, soft, painless, ill-defined glandular mass was present under the left ramus of the jaw. Two radium "emanation" capsules, each containing the equivalent of 40 mg. of radium bromide, were inserted through the anterior surface of the growth about 1 inch apart, and left *in situ* for twenty-four hours. The patient returned for examination in a week, when the whole mass had entirely disappeared. The appearance of the nasopharynx was as if a large adenoid mass had been removed a few days previously. Some weeks later the patient was feeling quite well; all signs of the growth had disappeared, and only a small gland could be detected under the left ramus of the jaw. Herbert Tilley (Journal of Laryngology, March, 1914).

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Tetanus Treated with Subcutaneous Injections of Phenol.—Report of a case of tetanus in a boy aged 11 in

which the original wound and scar were excised and pure phenol applied. At the same time subcutaneous injection of phenol (Bacelli's treatment) was started, 1 fluidounce of a 1 per cent. solution being given in the right axilla. The strength of the phenol solution was raised to 3 per cent. The groins and axilla were treated alternately. Chloroform was administered at each injection owing to the spasms produced by the needle-prick. The urine retained its normal color throughout. On the sixth day cutaneous erythema and slight edema were noticed at the sites of injections, and these were discontinued; but the spasms increased in violence and frequency, and the phenol solution was again given on the seventh day. On the thirteenth day the opisthotonos became very marked. By the twentieth day it had become excessive, although the spasms decreased both in violence and frequency. On the same day the opisthotonos suddenly began to diminish, and had entirely disappeared by the twenty-third day. The patient was able to open the mouth slightly about the sixteenth day. Improvement continued uneventfully during the next four weeks, and he was discharged cured on the fifty-sixth day. No antitetanic serum was administered. W. Graham Reynolds (Lancet, May 23, 1914).

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Urethritis, Abortive Treatment of.—Best results are obtained by the "sealing-up" method when the patient is seen within forty-eight hours after the beginning of the discharge. A 5 per cent. solution of argyrol is sealed within the urethra for six hours on each of five consecutive days, with the aid of non-contractible collodion. In carrying out this treatment, the patient empties his bladder, and lies on a couch. The penis is washed and wrapped in a sterile towel, after which 25 minims of 5 per cent. argyrol are injected into the urethra from a syringe holding exactly that amount. On withdrawing the syringe the surgeon compresses the lips of the meatus with his fingers, wipes the glans dry, and then applies collodion to the orifice with a camel's hair brush. The pressure must not be removed until the collodion is perfectly dry. The solution is retained in the canal for six hours, during which no liquids are to be taken by the patient. The collodion is then removed with cotton soaked in acetone. After the urethra has been emptied, the patient is required to drink a quart of water in order to flush the parts thoroughly, but next day he should prepare himself for the treatment by reducing his fluid ingesta to a minimum. E. G. Ballenger and O. M. Elder (Zeitschrift für Urologie, Band viii, Numer 1, 1914).

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Varicella, Nervous Complications of.—There is good evidence that focal lesions of the central nervous system (encephalomyelitis) may occur in varicella. The authors report the following case of encephalitis: A boy aged 2½ years had a mild attack of varicella, in which the temperature did not exceed 100° F. On the fifth day he was found unable to stand or talk distinctly; there was some tremor of the limbs, head, and tongue. The tremor of the tongue passed off quickly, but four days later tremor was marked in the limbs. It was a slow, rhythmic movement which prevented him from standing without support. The movements of the limbs were slow and stiff. The child was irritable and emotional. The reflexes were normal. The tremor in a few days gradually diminished

until it was noticeable only during excitement and at the end of the month had practically disappeared. The child completely recovered, but was thought to be more excitable than previously. The authors considered that the symptoms were due to a destructive lesion of the cerebellorubrospinal system.

A similar case has been reported by Caccia. A boy aged 3 developed tremor on the fifth day of varicella. Its onset was preceded by two days' vomiting. He was unable to stand erect and speech was slow. Ankle clonus, increase of knee-jerk, and extensor plantar response were present on the right side. The cerebrospinal fluid was sterile, but contained 0.3 per cent. of albumin. After four weeks all the symptoms had disappeared. Caccia attributed them to encephalitis of left cerebral hemisphere.

Marfan has reported a case of varicella complicated by encephalitis affecting the oculomotor nuclei. Poliomyelitis and peripheral neuritis have been recorded as complications, but the evidence is not altogether satisfactory. The occasional association of varicella with herpes zoster has been described by several writers. Other nervous complications recorded are convulsions, intracranial complications of otitis media, optic neuritis, hemorrhagic pachymeningitis, and neuromyositis. Chorea has been noted to develop at the end of an attack of varicella, and tuberculous meningitis has been recorded as a sequel. Reginald Miller and James A. Davidson (British Journal of Children's Diseases, January, 1914; Lancet, March 14, 1914).

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Wassermann Reaction.—The technique of the test as used by the author is a modification of the original Wassermann and Noguchi technique. A human hemolytic system is employed instead of the sheep system of Wassermann. An alcoholic syphilitic antigen is used, and the serums always inactivated before being tested. Two cases of primary untreated syphilis showed such variations of the Wassermann as would have rendered the diagnosis doubtful had the spirochetes not been demonstrated in the lesions. In 4 secondary cases, likewise untreated, the author made it evident that the strength of the Wassermann may vary all the way from a double plus or positive reaction to a negative one in the same patient within a few days and with the presence of marked symptoms of syphilis. Four latent cases which had shown no symptoms for a year previous, though they gave a double-plus reaction before the titrations were commenced, showed like variations. The daily titration of untreated syphilitics thus revealed great variations, and showed that a negative or doubtful reaction is of no value for a negative diagnosis. As regards the cause of these variations, the author is inclined to the view that the complement-fixation reaction is often of a dual nature, there being a specific reaction between the substances extracted from the spirochetes and antibodies in the syphilitic serum and a non-specific reaction between lipoids present in the extract and lipotrophic substances in the serum. The fact must be recognized that in untreated cases of syphilis such variations may occur and that a single negative reaction is absolutely worthless in diagnosis. The patient should be subjected to repeated examinations when a negative reaction is obtained before being considered free from infection. C. F. Craig (Journal of the American Medical Association, April 18, 1914).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

1. Internally: Equal parts of precipitated sulphur and milk-sugar; patient to swallow several times a day as much as is held on tip of a penknife. 2. Externally: Paint at night with a mixture of 10 parts of sulphur, 25 parts of alcohol, and 5 parts of glycerin. 3. Regulate bowels. 4. Meat, eggs, cheese, and sugar to be avoided. 5. Later, a ten- to fourteen- day course of Röntgen-ray exposures, one-third or one-fourth erythem doses being applied at 6 or 8 sittings, to a total of one and a half erythem doses. 6. Four or five weeks after this course, application of mercury quartz lamp for twenty or twenty-five minutes. The skin is to be carefully protected for eight or ten days and then gone over with the comedo extractor, any red spots left being treated with sulphur. *Kromayer.* 357

Acne Keloid. TREATMENT. In early cases small, isolated nodules may be excised; they do not recur if the incision is free of the circumscribed sclerotic mass constituting the nodule. *Adamson.* 357

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Alopecia Areata. TREATMENT. (1) The B. P. unguentum hydrargyri iodidi rubri (diluted from 4 to 2 per cent.); (2) the unguentum hydrargyri oxidi rubri, with acetum cantharidis, ℥j to ℥j, and (3) equal parts of sodium chloride and petrolatum found seviceable in this condition. Pure phenol often gave good results. Causes of peripheral nervous irritation, such as carious teeth, errors of refraction, or aural defects, to be investigated. In severe cases pilocarpine nitrate, injected into the scalp every week or fortnight in doses of 1/10 to 1/6 grain, is sometimes beneficial. *Dore.* 358

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

In amenorrhea, relative or absolute, ovarian extract considered best remedy by author. *Bandler.* 91

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Angina Pectoris. TREATMENT. Concussion at level of seventh cervical vertebræ, together with hypodermic injection of 1/10 grain (0.006 Gm.) of pilocarpine, to increase vagus tone, gives relief more promptly than does morphine. *Jarvis.* 160

Ankylostomiasis. TREATMENT. Betanaphthol in 30-grain (2 Gm.) doses given the first thing every morning is likely to prove more effectual than eucalyptus or thymol. Starvation of patient during such treatment is unnecessary; in bad cases it may be harmful. *Keith.* 165

Appendicitis. DIAGNOSIS. Following sign found valuable in diagnosis of appendicitis in small children, who show no sign of localizing appendicular pain: Upon light pressure over both iliac fossæ, the child executes slight movements of the right leg. If the pressure be increased, the right leg becomes rigid and irregular movements of the left leg are executed. Often the face suddenly flushes when pressure is made with the finger over the appendix. *Veau.* 477

Arthritis, Chronic. TREATMENT. Injections of phenol-camphor used with benefit. Must be made only into joint, never into spongy bone. Formula: Phenol, 30; camphor, 10; alcohol, 30. Only 0.5 or 0.25 c.c. is injected at one point, except in streptococcic processes, where 2 c.c. are necessary. *Pohl.* 235

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchitis, Acute. TREATMENT. Inhalations of recently prepared tincture of iodine from wide-mouthed bottles found to cure bronchial catarrhs in four days. Inspirations —from 4 to 8 or more at each sitting—to be more or less deep according to severity of case. Inhalations to be repeated 5 or 7 times a day. If much mucus, expectoration to be assisted by usual remedies. In children iodine tincture may be dropped on pieces of cotton to be laid on pillow (over oilcloth) while patient sleeping. *Torri.* 303

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing,

exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* Page 55

Burns. TREATMENT. (1) Hypodermic injection of morphine and atropine. (2) Immerse burned area in, or cover with light cloth moistened with, cold water to which has been added 1 teaspoonful of sodium bicarbonate or chloride per quart; continue until morphine effect manifest. (3) Spray or mop burn and surrounding surface with hydrogen dioxide, mop with dry gauze, apply gauze strips dipped in 2 per cent. picric acid solution in dilute alcohol, and cover with thin layer of cotton and adhesive strips or bandage. Allow dressing to remain till soiled, then reapply. (4) About third day, open blisters and mop away contents. (5) Where sloughing: Remove dead tissue as it loosens, cleanse surface with dioxide, dry, mop with picric solution, put on strips of rubber tissue previously kept in 1:1000 mercury bichloride solution, and cover with picric acid compress and cotton. *Plain.* 299

Cancer. DIAGNOSIS. Marked diminution of the area of cardiac dullness in the recumbent posture, as determined by percussion, found in 87 per cent. of 111 cancerous cases and only 16 per cent. of 107 noncancerous cases. This sign may be present in cancerous cases that show no wasting. When the sign is present, diagnosis of carcinoma should be rejected only after careful consideration. In some cases the sign has appeared early enough to enable successful resection to be carried out. *Gordon.* 234

Cancer, Gastric. DIAGNOSIS. Positive or negative diagnosis made by serial röntgenography in 616 cases. Of 97 cases operated on, diagnosis found absolutely correct in 94. Gastric cancer at any stage, or indurated gastric ulcer, can be detected by this method as accurately as renal calculi or bone fractures. *Cole.* 301

Cellulitis. TREATMENT. Packing infected arm from fingers to shoulders in hot mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection promptly. *Freese.* 304

Colles's Fracture. TREATMENT. In reduction soon after the accident, without anesthesia, the most satisfactory method is a sudden, sharp jerk of the wrist administered by clasping one's fingers under the upper fragment, making pressure with the thumbs on the dorsum of the lower fragment, and abruptly pronating the hands. *Allen.* 419

Conjunctivitis. TREATMENT. Instillation of a 1 per cent. solution of ethyl hydrocupreine hydrochloride, allowed to remain one-half minute, recommended in pneumococcic conjunctivitis, dacryocystitis, and corneal ulceration. *Sattler.* 481

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Corneal Ulcer. TREATMENT. Bathing part with 1 per cent. ethyl hydrocupreine solution for one-half minute every hour, six hours first day and twelve on next, found rapidly effectual in a case of ulcus serpens with hypopyon from chronic dacryocystitis. Sac expressed and conjunctiva cleansed with boric acid before each treatment with ethyl hydrocupreine, which was dropped on the ulcer. Practically specific against pneumococcic infections. *Wiener.* 168

Vioform in 2 to 4 per cent. ointment with petrolatum base, or in 1 or 2 per cent. strength in sterile oil, found useful in ulcers and injuries of cornea and sclera. *Dutoit.* 495

Coryza, Acute. TREATMENT. 1. Pill of morphine, ⅛ grain (0.01 Gm.), and a small dose of nitroglycerin. 2. In two hours, 10 grains (0.6 Gm.) of acetylsalicylic acid. 3. Hot bath. 4. On following morning, magnesium sulphate. 5. Locally, an ointment containing menthol, methyl salicylate, and oil of wintergreen in a lanoline base, to be sniffed back in nostril frequently, and followed by chloretone inhalant. 6. If discharge, feverishness, and periodic headache persist after a few days, patient should inhale steam from boiling water to which menthol and alcohol have been added. *Wilson.* 484

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solution. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delir-

ium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* Page 110

Dengue. TREATMENT. Three out of 7 cases were rapidly improved by administration of 30 drops of a 1:1000 solution of epinephrin by the mouth. Epinephrin is likely to prove useful in shortening convalescence in this disease and in mitigating the grave cases. *Khoury.* 329

Diabetes Insipidus. TREATMENT. Case in which injections of pituitrin caused marked, though but temporary, inprovement. *Farini.* 277

Diabetes Mellitus. DIAGNOSIS. Frommer's test recommended for detection of small amounts of acetone. Treat about 10 c.c. of urine with 1 Gm. of sodium hydroxide in substance and without waiting for it to dissolve; add 10 or 12 drops of a 10 per cent. solution of salicylaldehyde in absolute alcohol. Heat to 70° C. In the presence of acetone, marked purple-red color develops at zone of contact with alkali. This test indicates presence of 0.000001 Gm. of acetone. Urine must be diluted so that its specific gravity is about 1.01. *Muhlberg.* 232

TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.,* of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often causing glycosuria to disappear. *Cornwall.* 110

Dry vegetable diet recommended for cases in a state of acidosis. Patient to take daily 10 ounces (300 Gm.) of dried legumins (peas, beans, lentils), 5 ounces (150 Gm.) of butter, 3 to 6 eggs, and 3 to 6 aleuronat or gluten rolls. Green legumins may also be given. Soy beans may be used. This diet to be followed at least 3 days at a time. The starch it contains is better utilized than that of other foods, glycosuria often being not higher than under a diet poor in carbohydrates. The diet also combats nitrogenous loss; somnolence and anorexia, where present, often disappear, and diaceturia diminishes. *Labbé.* 300

Diphtheria. TREATMENT. Iodine ointment used locally in 30 cases. With 2 cotton pledgets secretions and false membrane were first removed and the surface dried, and a third pledget, smeared with the ointment, was then rubbed on the affected surface and surrounding area. This was done every 3 hours, or in severe cases every 2 hours, until improvement occurred. Many cases cleared up within a few hours, becoming free of false membrane on the second or third day. *Thomas.* 364

Dysentery, Amebic. TREATMENT. Use of quinine advised as an adjuvant to ipecac in resistant cases of this affection. Successful results were thus obtained in cases that failed to react favorably to emetine. *Brooke.* 417

Dysentery, Bacillary. TREATMENT. In acute form: (1) Rest and warm covering; (2) only small amounts of food at a time; (3) calomel at the outset; (4) acid drinks; (5) enemata of saline or soda solution or of methylene blue. In chronic form: (1) Rest; (2) enemata of 1:500 or 1:1000 silver nitrate, 0.25 to 0.5 per cent. tannic acid, 1:500 or 1:1000 thymol, 1 to 2 per cent. resorcinol or creolin, or enemata of gum arabic mixed with bismuth subgallate or iodoform; (3) phenyl salicylate, tannigen, ichthyol, or calomel internally; (4) serum treatment, 10 c.c. in mild cases, 10 c.c. twice at six- to ten- hour interval in medium cases, and 40 to 60 c.c. in severe cases, not exceeding 20 c.c. at a time when serum used daily; (5) appendicostomy or cecostomy with irrigation in severe cases. *Bassler.* 111

Following treatment recommended: 1. Calomel, 5 grains (0.3 Gm.). 2. Barley water and boiled milk for a day or two. 3. Warm applications to abdomen. 4. Six hours after calomel, an injection into bowel of sodium salicylate, 13 Gm. (3¼ drams); water, 650 c.c. (1⅓ pints) at body temperature, with a small dose of Dover's powder. Injection to be repeated if necessary on alternate days. In children, about 90 Gm. (3 ounces) of the salicylate injection should be used. 5. In chronic dysentery, a 10 per cent. decoction of simaruba bark, 1 dram (4 Gm.) every three hours. *Lutsch.* 481

Dysmenorrhea. TREATMENT. Cocaine applied to tuberculum septi in nose and anterior portion of inferior turbinate on both sides, followed by application of trichloracetic acid over these spots, in 93 cases. Four applications made between periods. Cases with premenstrual headache, nausea, and colic at onset of flow—but without organic pelvic lesions—completely relieved. Of 81 cases sending subsequent reports, 48 had been cured and 14 improved. *Mayer.* 167

Atropine found very useful, except in cases with high blood-pressure, when pressure must be reduced and cause sought and removed. *Stolper.* 235

Following exercise recommended: The patient lies on her back with the knees flexed and one hand on adbomen, and is then directed to see how high she can raise the hand by lifting the adbominal wall, and then depress it by contracting the abdominal muscles. This is to be repeated 10 times, night and morning. Jerky movement is to be avoided. Pain was lessened in many cases and wholly removed in a large number by this method. *Mosher.* 481

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* Page 11

In mild acute cases paint on lesions an aqueous solution of picric acid several times daily; in more severe cases apply wet dressings of the acid, held by facial mask. Prompt and gratifying results. In subacute and chronic types cure hastened by beginning treatment with two or three days' application of picric acid solution. *Wilcox.* 176

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Epilepsy. TREATMENT. Four patients with severe essential epilepsy treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic. Considerable benefit. Dose of fluid injected, 3 to 5 c.c. biweekly or weekly. Improvement striking both as to severity and frequency of attacks. In some, petit mal took place of grand mal. Greatest improvement noticed especially if injected fluid was taken from other patients during recurrent attacks, no matter how slight the latter. *Gordon.* 235

Epistaxis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin brought early relief in 5 cases. *Citelli.* 279

Epithelioma. TREATMENT. Concentrated sunlight, focused on growth with ordinary magnifying glass, found effectual. Useful where X-rays and radium not available. Invariably successful in obstinate recurrent ulcerative patches on face or nose. Focus sunlight on sore for ten or fifteen minutes at a sitting. If scab present, concentrate rays till burning is felt, then lengthen focus to cover wider area. Induce burning again every few minutes. Treat every day or two till scab easily removed, then apply a little cocaine and after three or four minutes apply rays so as almost to cauterize base of ulcer. Alternate with milder applications for fifteen minutes. Under milder treatments thereafter, at longer intervals, cure usually complete in three to six weeks. *Seelye.* 166

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

In facial erysipelas: Have beside bed bowl of boric acid solution in which ice is placed. Keeping cloths frequently moistened with the solution continuously on face effectually relieves pain and burning. Where leg or arm involved: Wet dressings of boric acid or aluminum acetate. In migratory cases: Ichthyol may be applied or surfaces painted with picric acid solution. *Erdman.* 112

Pyramidon used in 20 cases with uniformly favorable results: Diaphoresis, antipyresis, sedation, fading of eruption, which ceases to spread, and improved general condition. Diuretic beverages also given. Locally, following ointment used: Phenolis, camphoræ pulveris, ana gr. xv (1 Gm.); adipis lanæ hydrosi, petrolati, ana ℥ss (15 Gm.). *Satre.* 167

Discomfort and pain more rapidly relieved by picric acid solution than other agents, and edema disappears promptly. *Wilcox.* 176

Two facial cases treated by local applications of hepatic lipoid, rapid recovery following. *Tilmant.* 416

Erythema. TREATMENT. Epinephrin used in 3 cases of erythematous taches of the face ("red nose"). A 1:1000 solution was given internally in 5-minim (0.3 c.c.) doses in water 3 times daily half an hour before food, and the treatment continued during five to six months (with short intervals). The erythema almost entirely disappeared, and a year and a half after treatment it had not reappeared. No bad effect on the heart or blood-pressure was observed. *Rothmann.* 348

Felon. TREATMENT. Mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection in an unusually short time. *Freese.* 304

Fracture of External Malleolus. TREATMENT. Case of oblique fracture of fibula, involving malleolus, in which, great pain continuing after splinting, the malleolus was exposed by rectangular incision and, after detachment of external lateral ligament, entirely removed. The foot was splinted at a right angle to the leg. Pain ceased, and on the twelfth day the patient could stand on the foot without discomfort. Similar treatment recommended for all detached external malleoli. *Bland-Sutton.* 360

Fracture of Femoral Neck. TREATMENT. In adults the author recommends the addition of a side pull to the Buck extension. The side pull is exerted on the upper end of the thigh by means of a weight and pulley, the latter being placed opposite the crest of the ilium. It can be attached to the wall, a standard, or the side of the bed, and should be so adjusted that the pull is upward and outward at an angle of 45 degrees. The amount of weight at the foot of the bed should be sufficient to overcome the shortening, and the side weight about one-third of the foot weight. A well-padded splint of surgeon's felt, or sole leather, should be applied to the inner and under sides of the thigh, coming well up to the perineum, and fastened to the thigh by adhesive plaster encircling the limb. A band made of several layers of gauze or cheesecloth is convenient for the side pull. It should be fastened to the splint by adhesive plaster. By shortening the lower arm of this gauze the limb can be

rotated inward, thus avoiding eversion. *Moore.* Page 361

Fracture, Ununited. TREATMENT. Osmic acid, 0.02 Gm. in 1 per cent. solution, injected directly into focus in a case of ununited fracture of fibia and fibula, rebellious for six months. Injection repeated 3 times in two weeks. Patient discharged two weeks later. Stimulating action of the acid on periosteum and marrow confirmed in rabbit experiments. *Segrè.* 307

Fractures about the Elbow. TREATMENT. These cases should be started on an internal right angular splint. At the second or third dressing, while the fragments are still plastic and when the swelling has subsided, the wrist should be slung from the neck, obtaining the most acute flexion possible without too much pain. The flexion is increased at subsequent dressings for two or three weeks, when it is decreased again until all dressings are abandoned at the end of four or five weeks. *Allen.* 419

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ℥iiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

In furunculosis of the external auditory canal, cleanse canal of cerumen, discharge, polyps, etc., and insert a wick of cotton, or of gauze if there is a discharge. Ripe furuncles should first have been incised in their centers. The wick is to be kept saturated with alcohol, plain or with boric acid, and should be changed daily. If pain is severe, and no pus can be located, it is best to give a sedative and wait for pointing, rather than incise at random. *Lothrop.* 482

Gastric Atony, Acute. TREATMENT. Continuous lavage of stomach through nose recommended. Cocainize nose and work soft oiled tube with 8 to 11 mm. lumen down into stomach. Attach longer tube and carry to receptacle. Amounts up to 5 liters thus drain away. Keep outlet of tube at level of bed to prevent aspiration of mucous membrane. *Grosser.* 305

Gastroenteritis, Infantile. TREATMENT. *B. lactis bulgaricus* in tablet form administered in 55 cases, varying in severity from moderate degrees of infection—6 stools a day—to the most grave—20 or more. From 3 to 10 tablets a day were given to each infant, according to the gravity of the illness. Results: 43 gained in weight; 2 lost; 3 gained and later lost, and 7 showed no change. There were no deaths. The temperature came down to normal within one to three days, and in two or three days the stools became yellowish or brown, well formed, and free from curds, mucus, and blood. *Schwartz.* 364

General Paralysis. TREATMENT. Remissions may be prolonged by suitable doses of tuberculin ($\frac{1}{1000}$ to $\frac{1}{5000}$ mg. of tuberculin residue). *Jackson.* 236

Glaucoma. TREATMENT. In non-inflammatory glaucoma, when operation is consented to, Elliot's sclerocorneal trephining is by far the safest procedure and the most productive of results. In 29 cases thus treated there were no serious complications at operation in any case. Seven eyes with absolute glaucoma were preserved that formerly would have been removed. In 7 other eyes which were sightly a small degree of vision was gained by the operation. In the remaining 15 the eyes gained considerably in vision and usefulness. *Reber.* 362

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Colloidal silicon injections used with benefit in a case of simple goiter. Trial of this measure is advised in both simple and exophthalmic goiter before operation is resorted to. *Suard.* 345

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former

condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* Page 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Report of cases improved by administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided among twenty days in each month. *Gaultier.* 90

Next to operative treatment, where indicated, repose is important. The patients should be gotten out of their ordinary environment. A trip to an altitude of about 3600 feet often acts favorably, starting first at 1500 feet. The patient should be well nourished, on a carbohydrate-fat mixed diet. Galvanic stimulation of the neck is often useful; the anode being on the sternum and the cathode behind the angle of the jaw, a current of 1 or 2 milliampères should be slowly turned on for one to three minutes and then slowly turned off. *Bauer.* 411

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1) Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2) grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* 48

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made. *Wolff.* 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomentation applied for five or ten minutes twice, and followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* 50

Hemoptysis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin nearly always brings relief in average cases. Where first injection fails, give a second, and later if necessary a third, the latter intramuscularly. *Citelli.* 279

Intravenous injections of 0.5 c.c. of pituitrin were followed almost at once by cessation of hemorrhage in 10 out of 12 cases. Where the hemorrhage recurred on succeeding days, the same prompt relief was obtained. *Rist.* 411

Hemorrhage, Cerebral. TREATMENT. Venesection used with good results and recommended in cases of apoplexy in full-blooded patients with blood-pressure of 200 mm. or more. Amount of blood let in author's cases, 12 to 48 ounces. Where vein at elbow not easily found in stout persons, there are usually varicose veins in legs which can be opened. *MacFarlane.* 121

Hemorrhage, Gastrointestinal. TREATMENT. Iodine tincture in small doses at short intervals found effective in checking hemorrhage and diarrhea in 6 cases of typhoid fever and in 4 of gastric ulcer. It also relieves abdominal tenderness in the latter condition. *Nottebaum.* 484

Hernia. TREATMENT. Inversion of hernia recommended in patients who take anesthetic poorly and maintain strong expiratory efforts, forcing viscera into sac under pressure. Primary union and cure of hernia in each of author's 7 cases thus dealt with. *Haynes.* 170

Herpes Labialis. TREATMENT. Picric acid solution causes rapid drying of lesion and tends to prevent extension. *Wilcox.* 176

Hodgkin's Disease. TREATMENT. Benzene, 5 minims (0.3 c.c.) three times daily at first, then increased to 10 minims (0.6 c.c.), caused marked regression of enlarged nodes, beginning two weeks after treatment begun, in a case previously treated unsuccessfully with X-rays. The 10-minim dose was continued for six weeks. *Lawson and Thomas.* 173

Hyperchlorhydria. TREATMENT. Cream diet considered useful. (See Ulcer, Gastric.) *Nichols.* 169

Following measures recommended: (1) Magnesium oxide, combined with sodium sulphate and belladonna in small amount. (2) All food to be well cooked and most carefully

minced. (3) Patient to take 2 or 3 meals at two-hour intervals in forenoon, but nothing after lunch until 7 P.M., when only porridge to be taken. (4) Fluid intake to be generally diminished and restricted to hours when stomach not filled with food. (5) In severe cases, or where gastroptosis: Rest in bed for two or three weeks. (6) Hot compresses twice daily for two hours; cold compresses at night. (7) If hyperacidity arises on basis of a catarrh: Rinse empty stomach in morning with 1:1000 salicylic acid or 1:500 silver nitrate solution. (8) Bowels to be carefully regulated. *Schmidt.* Page 302

Hyperthyroidism. TREATMENT. Injection into enlarged thyroid of 1 to 4 per cent. solutions of quinine and urea hydrochloride caused marked improvement in 3 cases. *Watson.* 265

Ileus. TREATMENT. Continuous lavage of stomach through nose recommended in duodenojejunal occlusion, postoperative bowel paralysis, ileus from adhesions, spasmodic contraction from peritonitic reflexes, and vicious circle after gastroenterostomy. (See Gastric Atony, Acute.) *Grosser.* 305

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Infections, Local. TREATMENT. Following summary of serviceable measures present: *A.* Inflammations with slight serum exudation, but with redness, heat, swelling, pain, and loss of function: 1. Rest. 2. Elevation. 3. Hot, wet dressing.—*B.* Where much serum exudation, but slight tendency to necrosis: 1. Incision. 2. Place gauze in wound saturated with Chlumsky's solution. (Camphor, 60 parts; phenol, 30; alcohol, 10.) 3. Wet dressing; keep wet. 4. Remove gauze in twenty-four hours. 5. Insert rubber drain. 6. Apply wet dressing.—*C.* Where marked necrosis: 1. Incision. 2. Drainage. 3. Wet dressing. 4. After inflammation receded, Durante's solution. (Iodine, 1 part; potassium iodide, 10; guaiacol, 5; glycerin, to make 100.) 5. Dry dressing. *Hoag.* 307

Insanity. TREATMENT. Recovery in manic-depressive insanity may be hastened by stimulation of leucocytosis by injection of 1 c.c. of terebene subcutaneously in the flank. *Jackson.* 236

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intertrigo. TREATMENT. Paint picric acid solution on surfaces and separate them with thin layers of absorbent cotton. In the more severely infected cases wet dressings of picric acid. Prompt results. *Wilcox.* 176

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valuable for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Iodine Poisoning. TREATMENT. Calcium lactate internally found useful in 2 cases of iodine poisoning from a course of potassium iodide. *Von den Velden.* 418

Lumbago. TREATMENT. Salicyl compounds or a 10- or 20- grain (0.6 or 1.2 Gm.) dose of quinine at onset of condition useful. Rochelle salts, ½ to 1 dram (2 to 4 Gm.) every hour or two until urine alkaline and bowels freely moved, also valuable. "Walking the lumbago off" may succeed if free perspiration accompanies the exercise. Turkish bath in early stage safer and more effective. Later: Rest, dry cups locally, deep massage, faradic current, and, if salicylates fail, iodine, in vegetable protein combination. *Henry.* 175

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Gold and potassium cyanide injected intravenously in 12 cases. Single dose, 0.01 to 0.05 Gm. Results good. Course of 12 to 14 injections followed by interval of two to three weeks, after which another treatment given. Even in severe cases, therapeutic results better than with tuberculin and other measures. *Poór.* 236

Mammary Abscess. PROPHYLAXIS. Threatened mammary abscess underwent absorption in 2 or 3 cases soon after administration of pituitary extract. *White.* 283

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Nasal Catarrh, Chronic. TREATMENT. Lavage with a solution of powdered boric acid, sodium bicarbonate, and sodium chloride in equal parts (with a little menthol added), 1 teaspoonful to a pint of tepid water, recommended. A ball-syringe should be gently used in carrying out the measure. Where local dryness is marked, the following oily spray is useful: Menthol, gr. v (0.3 Gm.); camphor, gr. ij (0.12 Gm.); oil of eucalyptus, ♏iij (0.2 c.c.), and oil of sweet almonds, enough to make f℥j (30 c.c.). *Wilson.*
Page 484

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation, in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Osteomalacia. TREATMENT. Case in which excellent results obtained from epinephrin, injected in doses of 8 minims (0.5 c.c.) of 1:1000 solution, daily, in 2 series of 9 injections each. Patient finally discharged cured. *V. Salis.* 278

Ozena. TREATMENT. Use of sugar recommended. For first week or two surgeon should carry out treatment himself, and precede sugar by removal of crusts from nose, softening them if necessary with hydrogen dioxide or sodium bicarbonate solution. Patient to use nasal syringe once daily. After crust removal, massage mucosa with cotton-tipped probe; then nostrils may be packed with ribbon gauze soaked in simple syrup, to be removed in twelve hours. Repeat this treatment on alternate days. After a fortnight patient can insufflate powdered sugar himself. *Harry.* 175

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Pericarditis, Adhesive. DIAGNOSIS. Retraction of the chest wall circumscribed along the left costal arch between the parasternal and anterior axillary lines, and with pulsation, is pathognomonic. To examine for retraction one should lay one hand on the lower part of the sternum and the other on the spine opposite; the patient then taking a deep breath, the chest is felt to grow narrower and a distinct systolic retraction perceived. Preference of edema for the upper part of the body, as well as the paradoxic engorgement of the neck veins during inspiration, are also characteristic. *Tornai.* 424

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Phlebitis, Chronic. TREATMENT. Local alternate hot and cold submersions and spray advised. Two tubs or pails are used, one containing cold water and the other water at 110° F. The affected limb is first submerged in the hot water for thirty seconds, then in the cold for fifteen seconds. This alternation is gone through 10 times, ending with the cold-water submersion. The part is then gently rubbed until the skin is dry and red, showing proper reaction. Gentle stroke massage in the direction of the venous flow is then to be carried out for ten minutes, the skin dusted with talcum powder, and an elastic support applied. The spray method (spraying with sponges of hot and cold water or a nozzle-spray attachment), applied for the same length of time, is useful to treat the upper parts that cannot be submerged. *Foster.* 424

Placenta Previa. TREATMENT. In marginal variety, inject 30 minims (2 c.c.) of pituglandol and at once rupture membranes. In central variety, according to extent of dilatation, perform version or introduce metreurynter and give pituglandol. Metreurynter generally expelled spontaneously in one-half hour. Then perform version and give second dose of pituglandol. *Gall.* 280

Pleurisy. TREATMENT. Autoserotherapy recommended in all cases of serofibrinous pleurisy in which pyemic infection is absent. A positive cure may be expected in over 80 per cent. of cases. In large effusions causing severe dyspnea and pain one should aspirate 10 to 200 c.c. of fluid and, before withdrawing the needle entirely, reinject 2 to 3 c.c. under the skin. Immediate relief from symptoms and a more rapid absorption of the exudate will follow. The injections should be repeated every other day until decided improvement takes place. *Pfender.* 417

Use of calcium lactate internally in pleurisy is indicated only when the effusion constantly recurs after puncture. *Von den Velden.* 418

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.*, daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Vaccine treatment advised. First give polyvalent stock vaccine of pneumococcus and streptococcus, of each, 30 million, as soon as possible. Make sputum smears and cultures, blood-cultures in early cases, lung puncture in late ones, and prepare autogenous vaccine. If no definite response in twenty-four to forty-eight hours, repeat or preferably give autogenous vaccine. If still no response in thirty-six or forty-eight hours, double the dose. If there is re-

sponse, as shown by improved clinical symptoms and signs, increased well-being, etc., defer reinoculation three days, or until the first symptoms of retrogression in general condition or physical signs occur. Maintain the dosage or increase it every two or three days until the patient entirely well. Generally about three doses are necessary. Average mortality with vaccine treatment only 5 to 10 per cent. Convalescence shortened and danger of complications lessened. In severe cases also give 20 to 30 grains of sodium citrate every two or three hours. *Craig.* Page 238

Epinephrin, 8 minims (0.5 c.c.) of 1 : 1000 solution in 1 pint (500 c.c.) of saline solution subcutaneously, caused prompt improvement in a desperate case. *Lonhard.* 281

Camphor-injection treatment recommended. A 30 per cent. preparation of camphor in oil of sesame, sterilized in a boiling water bath, should be used. As soon after the initial chill as possible, 2½ fluidrams (10 c.c.) of the preparation per 100 pounds of body weight should be injected hypodermically every twelve hours except in bilateral pneumonia and in severe toxemia, when injections should be made every six to eight hours. The site of injection should be the outer thigh or abdomen. The injection should be made slowly and the oil gradually deposited below the subcutaneous fatty tissue and not into it. *Cruikshank.* 426

Poliomyelitis, Acute. DIAGNOSIS. Preparalytic symptom: A peculiar, twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to somewhat less than a minute. Usually affects part or whole of one or more limbs, face, or jaw, but sometimes whole body. Duration of spells short at first. Often accompanied by a cry similar to hydrocephalic, or by brief period of unconsciousness. *Colliver.* 177

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Low nitrogen diet found to have very favorable influence upon psoriasis eruption, especially when extensive. Severe cases improve under such a diet almost to the point of disappearance of the eruption. *Schamberg, Kolmer, Ringer, and Raiziss.* 178

Application of picric acid solution brings immediate and constant relief from itching. *Wilcox.* 176

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1 : 200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* 53

Puerperal Sepsis. TREATMENT. Fixation abscess recommended in this and other severe infectious states, including pneumonia, appendicitis, typhoid fever, etc., whenever condition seems to be taking a turn for the worse. Inject 2 c.c. of pure oil of turpentine under gluteal skin. When abscess forms, evacuate through small incision (do not drain) and apply Bier cups twice daily. Excellent results in 18 cases. *De Lostalot.* 168

Abstention from curettage in cases of sapremia advised. Instead, one should dilate cervix, using first a dressing forceps, then a small dilator, and lastly a large dilator. After this, strips of gauze should be soaked in a 50 per cent. dilution of tincture of iodine. One strip is to be introduced into the uterus with a uterine sound, left about a minute, and then replaced by another. As a rule, from 5 to 8 strips are thus used. When a drain is required, the last strip is left in the uterus, to be removed later in about eight hours. *Welton.* 487

In the septicemic form, local disinfection of the genital canal is the first measure requisite. If temperature does not subside, or rises again, intrauterine douching with the following solution is advised: Tincture of iodine 2 fluidrams (8 c.c.); 95 per cent. alcohol, 8 fluidounces (240 c.c.), and sterile water, enough to make 2 quarts (liters). Once daily is sufficient. If a sharp rise in temperature follows, local disinfection should cease. An easily digested, largely liquid diet is indicated. Enteroclysis and serum treatment are at times useful. Continual septic symptoms plus an abdominal mass, palpable above the symphysis or Poupart's ligament, call for laparotomy. *Hirst.* 490

Pyloric Spasm. TREATMENT. Atropine in a certain proportion of cases brings relief. The author found that epinephrin hypodermically procures complete and lasting relief in most instances. In 2 cases the palpable pyloric tumor could be felt to melt away under its influence. Prolonged gastric lavage, using water at 105° F., also has a happy effect in relieving spasmodic stomach conditions. *Stockton.* 367

Pyorrhea Alveolaris. TREATMENT. Sensitized vaccine against streptococcus, staphylococcus, pneumococcus, and bacillus of Friedländer used in a number of cases. After 2 injections, mechanical and dental treatment added. After 4 or 5 injections, teeth clean and firm, and organisms gone. Three or four supplementary injections given. No recurrence in six months. *Bertrand and Valadier.* 304

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disappeared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* Page 55

Rachitis. TREATMENT. Pituitary extract given to 16 young children with rickets, and effects compared with controls. After a few weeks of pituitary, the children were able to stand and began to walk; fontanelles began to close and growth of teeth was considerably accelerated. Osseous tenderness gradually diminished, weight was gained, and musculature became firmer. *Weiss.* 218

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intramuscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* 91

Rheumatism, Acute. TREATMENT. Intravenous use of sodium salicylate resorted to in 12 cases, 130 injections in arm veins being given in all. A very fine, sharp needle should be used. The solution is made by dissolving 10 Gm. of C. P. crystalline sodium salicylate in 50 c.c. of distilled water freshly sterilized by boiling. Each cubic centimeter contains 3 grains (0.2 Gm.) of the salicylate. Usually the dose was 15 or 20 grains (1 or 1.25 Gm.) and injections were given at twelve- or eight- hour intervals over a period of three to six days. Occasionally, in robust men, 30 grains (2 Gm.) were given, and as much as 120 grains (8 Gm.) in the first twenty-four hours, without unpleasant effects. Relief of pain was prompter and more pronounced than from oral administration. The method is indicated in patients unable to retain the drug by mouth; those who show little or no response to the usual method; to start the treatment with a few intravenous injections where pain is intense, and in cases with threatening heart complications, or in severe rheumatic affections of the eye. *Conner.* 428

Ringworm. TREATMENT. Body ringworm more easily controlled by painting on picric acid solution than by usual antiseptic ointment. *Wilcox.* 176

Wash part with a strong solution of sodium bicarbonate, swab with a mixture of 1 part of ether to 2 parts of alcohol, dry, paint with a 2.5 per cent. tincture of iodine, and apply immediately an ethyl chloride spray until the skin gets china white. In twenty-four to forty-eight hours the patch of ringworm will have become quiescent. Next tiny spots should be looked for and similarly treated. In ringworm of the scalp 3 or 4 applications of iodine and spray are required, but on the face or smooth surfaces 1 application suffices. *Foley.* 429

Scarlet Fever. TREATMENT. Iodine ointment used locally in 19 cases (see Diphtheria). These cases were unusually free from local complications. *Thomas.* 364

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Scorbutus. TREATMENT. Calcium lactate, 45 grains (3 Gm.) a day, found a valuable measure. *Von den Velden.* 418

Skin-grafting. Following method of dressing skin-grafts just after their application described: Strips of gauze, 6 to 8 layers in thickness, are thoroughly impregnated and buttered with sterile 33⅓ per cent. bismuth paste (Beck's paste). These are laid over the grafts smoothly for 2 or more inches beyond the wound. No wrinkles or folds should remain. Over these is placed a layer of absorbent cotton, and the whole held firmly by a roller bandage. The first dressing should be done on the fifth day, great care being exercised in the removal of the primary dressing. A similar dressing is reapplied and subsequent dressings done every third or fourth day as required. At about the fifth dressing one can peel from each graft a thin film of dead cuticle, leaving a firm, pink, healthy graft in position. *Coerr.* 358

Spasmophilia in Children. TREATMENT. Combined treatment with phosphorized cod-liver oil and milk curds from which the whey had been removed by washing with water (thus removing all mineral salts) was employed in 12 cases. A cure was obtained in 9 cases within a week, twice at the end of the second, and once in the fourth week. There was loss of weight, but this was soon made up on return to full milk diet. *Bernheim-Karrer.* 368

Syphilis. DIAGNOSIS. Luetin test valuable as diagnostic measure in tertiary and latent stages of syphilis, indicating a state of hypersensitiveness to spirochetal proteins induced by a period of cessation of introduction of these proteins previous to the test. Provocative injection of salvarsan, followed by both Wassermann and luetin tests, suggested to ascertain whether treatment has been curative in a given case. *Foster.* 179

Diminution in the bone conduction of sound, with otherwise normal hearing, is one of the earliest signs of constitutional syphilis. A tuning fork is struck and placed on the patient's mastoid process. When he no longer hears it, it is placed upon the physician's mastoid. If it is still audible to him,

the test is positive, provided the patient's hearing was otherwise acute. The sign is positive also in brain tumors, hydrocephalus, epilepsy, and tetany. *Beck.* Page 491

TREATMENT. Epinephrin, 15 to 20 drops of 1:1000 solution in a little water by mouth, advised ten to fifteen minutes before injection of neosalvarsan, to prevent "nitritoid" symptoms, arising in some patients from the latter, *e.g.,* facial congestion, tingling in throat, nausea, and vomiting. *Galliot.* 212

Tonsillitis, Ulcerative. TREATMENT. After thoroughly washing surfaces and crypts, apply 10 per cent. silver nitrate solution over ulcerated surface and carry down into crypts as well. Then dust thymol iodide with powder blower over gland and throw it into diseased lacunæ. Where tonsils seat of recurring inflammation, but patient objects to removal, use electric cautery. Selecting 3 or 4 crypts at a time, apply 10 per cent. cocaine solution to interior of each with fine-pointed cotton applicator. When anesthesia sufficient, introduce curved electrode into each crypt and turn on sufficient current to produce a white heat before electrode removed. Patients thus treated are freed from further attacks. *Bishop.* 241

Tracheobronchial Glandular Enlargement. DIAGNOSIS. Percussion of thoracic vertebræ, especially those above level of inferior scapular angles, affords tonal changes of clinical value in this condition; these must always be correlated, however, with mural signs in the individual case. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect vertebral percussion sound less, and oftener produce dullness than hyperresonance. *Da Costa, Jr.* 180

Trigger-finger. TREATMENT. Paint the part with iodine, insert a fine bistoury in the flexure crease, and, pressing the point down to the tendon, draw it along for ½ inch. Relief is instantaneous and final. A small pad of boric gauze may be applied to make pressure for two days. The tendon is easily located by thumb pressure at the crease. *Abbe.* 492

Tuberculosis. TREATMENT. Garlic, 1 fluidram (4 c.c.) of the expressed juice or 2 drops of the essential oil three times a day, recommended in all forms of tuberculosis. Externally, poultices of crushed garlic bulbs, 1 part, with 3 parts of lard, or garlic ointment (50 per cent. of the juice in petrolatum) are to be applied.

Mercury biniodide, $\frac{1}{30}$ grain three times a day internally, and unguentum hydrargyri externally, give the best results next to garlic. In cases of severe toxemia, where more active elimination is necessary, the following treatments give best results: (1) Normal saline, 220 c.c., at 106° F.; also of value in hemorrhagic cases, intravenously. (2) Guaiacol, 32 drops in 220 c.c. of sterile water, at 106° F., intravenously. (3) Mixture of sodium salicylate, guaiacol, and glycerin, of each, 32 grains or drops in 220 c.c. of sterile water, at 106° F., intravenously. (4) A 2 per cent. aqueous solution of pure phenol (Bacelli's treatment), 1- to 5- c.c. doses hypodermically or by Murphy's drip in 10-c.c. doses; the kidneys must be watched. Cases of continued septic temperature, not improving from the above, should be treated surgically. For making the soil unfavorable for the tubercle bacillus, phosphorus, $\frac{1}{1000}$ grain t. i. d., and Fowler's solution, 1 drop t. i. d., give the best results. *McDuffie.* 431

Tuberculosis, Articular. TREATMENT. X-rays found useful in bone and joint tuberculosis. Aluminum or thick leather shield to be used. Treatment not to be employed in children less than 5 years old, and in older children epiphyses should preferably be avoided. Best effects noted in cases with sinuses and secondary infection. Part exposed from all sides to an erythema-producing dose; three weeks then allowed to elapse before repetition. Joints healing under the rays show but little limitation of motion. Abscesses with skin about to yield should not be rayed, owing to danger of necrosis. *V. Schede.* 165

Tuberculosis, Laryngeal. TREATMENT. Scarlet red, 10 per cent. in a mixture of equal parts of sesame oil and petrolatum, applied twice daily in cases with laryngeal lesions, whether ulcerative or not. No unpleasant results. Prompt relief of pain in every case, tendency of ulcerations to heal, hoarseness improved, and, where only infiltrations and edema, swelling markedly less after a few weeks. *Hinman.* 306

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

The X-rays will demonstrate much more accurately the extent of involvement than any other diagnostic agent. In determining the operability of a surgical condition in a patient suffering also with pulmonary tuberculosis, or in giving a prognosis in a known case of pulmonary tuberculosis, radiographic examination is essential. *Moore.* 367

TREATMENT. Frequency of gastric atony and dilatation, with resulting digestive symp-

toms and secondary toxic manifestations (aches and pains in chest and right hypochondrium, morning depression, insomnia, hepatic weight, vertigo, chilliness an hour after meals, fleeting edema, etc.), in pulmonary tuberculosis pointed out. Treatment: (1) Support to stomach and abdomen by Rose belt of plaster or moleskin, followed, upon improvement, by supporting belt to be worn continuously and later in daytime only. (2) No liquids with meals or for two to two and one-half hours after. (3) Lunch to be light. (4) Recumbency, with attempt to sleep for one-half to one hour after each meal. (5) No alcohol or fresh bread. (6) Medicinal treatment: Tr. nucis vomicæ, acidi hydrochlorici dil., āā f℥ss (15 c.c.); glyceriti pepsini, f℥iss (45 c.c.); aq. menthæ pip., q. s. ad f℥iij (90 c.c.). Teaspoonful in ½ glassful of water after meals. If much flatulence, add chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until relieved. (7) Cold shower or sponge baths, with needle bath to abdomen, followed by brisk rub, each morning. (8) Where mucous passages and flatus: Turkish towels, wrung out in hot water, to be applied to abdomen for one-half hour after meals. (9) Thorough mastication of food and abstention from worrying at meals. (10) Fats to be avoided at first. *F. N. Robinson.* Page 95

Measures to overcome fever described: (1) Where prolonged fever drains on patient's strength, pyramidon is drug to be preferred—5 grains (0.3 Gm.) in cachet at night, or, if necessary, three times a day. In neurotics bromides sometimes efficacious. (2) Rest in recumbency to be insisted on until temperature does not rise above 99° in men or 99.2° in women, when patient may sit in chair for two hours, then recline on couch, in open air if possible. Exercise then gradually increased. (3) Where severe cough, sedative mixture tends to prevent fever from the exertion and autoinoculation. (4) Where rest and drugs fail, cautious use of tuberculin (T. R. or B. E.), beginning with only $\frac{1}{100000}$ mg., exerts antipyretic action, though often only for short periods. Tuberculin acts best in cases free from fever while at rest, but febrile when exercise taken. *Wethered.* 120

Value of auscultation at acromion process in apical tuberculosis emphasized; it amplifies all auscultatory signs over apices. Of 28 cases in first stage, all showed acromial breathing. *Magida.* 239

Guaiacol administration, beginning with 5 minims (0.3 c.c.) three times daily, increasing by 2 minims (0.12 c.c.) a week up to 12 or 15 minims (0.75 to 1 c.c.), and continuing the drug for four months or longer, yielded highly satisfactory results. The drug should be taken immediately before food. The following formula was used: Guaiacolis, f℥j (4 c.c.); alcoholis, syrupi limonis, āā f℥j (30 c.c.); spiritus chloroformi, f℥ij (8 c.c.); aquæ, q. s. ad f℥vj (180 c.c.). One-half ounce three times daily. *Mayberry.* 366

Typhoid Fever. Treatment. Venesection found to yield marked benefit in a case of typhoid fever with severe infection in toxemia. Removal of 6 to 14 ounces cannot do harm and may be productive of much good in such cases. *Rudolph.* 494

Ulcer, Gastric. Diagnosis. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* 114

Treatment. Cream diet used with success in 26 cases. One quart (4 glasses) a day yields 1800 calories. To this may be added 600 c.c. of milk or 6 slices of bread or 5 tablespoonfuls of oatmeal gruel or 3 eggs. Cream causes inhibition of gastric secretion. If not tolerated in full strength, it may be diluted with equal or greater amount of milk. Ice-cream a useful variant. Some marked cases progressed to good recovery in two or three months under cream diet. Method adapted for bed or ambulant treatment. Also useful as prophylactic against recurrence of ulcer. *Nichols.* 169

Ulcers. Treatment. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

Urticaria. Treatment. Pituitary and adrenal preparations found useful. *Morris.* 11

Vaccination. Tincture of iodine, applied to the vesicle as soon as possible after the latter has formed, and repeated two or three days later, either prevents pustule formation or so limits it that the several pustules formed do not coalesce. The vesicles soon dry up and form a small scab. In not one of 116 cases so treated was there secondary infection with pus-producing bacteria, whereas in those not so treated about 30 per cent. were secondarily infected. There is no interference with the immunizing process. The scab should be kept covered with sterile gauze for several weeks. In cases of secondary infection with pus formation best results are obtained by removing the scab and pus, painting the base with tincture of iodine, and, when dry, covering with bismuth subiodide powder. Superfluous granulation tissue should be treated with a stick of silver nitrate. *Albert and Alden.* 369

Vomiting. Treatment. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Vomiting of Pregnancy. Treatment. Apomorphine, $\frac{1}{36}$ grain (0.0018 Gm.) in a teaspoonful of water, found effectual in a

severe case; likewise in other cases of vomiting or nausea. *Field.* Page 182

Thyroidin in 1½-grain (0.1 Gm.) tabloids given in several cases, with complete curative effect. *Koreck.* 284

Brilliant results obtained in some cases by administration of thyroid preparations. *Walker.* 409

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1 : 1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received ⅓ c.c. as initial dose and ⅔ c.c. four days later; others, ½ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a bronchopneumonia as complication, a mixed vaccine should be used. *Davidson.* 118

Silver nitrate in 2 per cent. solution applied to throat in 95 early cases to prevent spread of infection downward from pharynx. Useful results in 84 instances. Mucus secretion prevented and coughing spells due to irritation by secretion minimized. Silver solution applied every day at first; later, and in older children throughout, on alternate days. *Ochsenius.* 182

Epinephrin, 3 minims (0.2 c.c.) of 1 : 1000 solution, given every four hours in case in a child 7 years old, ill six weeks. Paroxysms markedly reduced almost at once. Drug then continued 3 times a day for three weeks more. *Lord.* 280

Wounds. TREATMENT. Stream of air from ordinary electric fan or register found useful in drying and promoting healing in large wounds, obstinate leg ulcers, and discharging eczema. *Heisler.* 182

Mixture of saturated magnesium sulphate solution and glycerin in equal parts recommended for dressing infected wounds. *Freese.* 304

Following summary presented: *A. Incised wounds:* 1. Paint with iodine. 2. Shave dry. 3. Tie all bleeding points. 4. Remove foreign substances. 5. Suture all tendons and nerves. 6. Again apply iodine in and around wound. 7. Suture wound. 8. Apply dry sterile dressing.—*B. Lacerated wounds:* 1, 2, 3, 4, 5, same as in *A.* 6. Cut away all damaged tissue. 7. Again apply iodine. 8. Suture wound.—*C. Punctured wounds:* 1, 2, same as in *A.* 3. Enlarge opening for drainage. 4. Insert rubber drain. 5. Alcohol dressing. 6. Tetanus antitoxin.—*D. Gunshot or bullet wounds:* 1, 2, same as in *A.* 3. If much bleeding, enlarge opening and tie vessels. 4. If nerve injured, suture nerve. 5. Close wound. 6. Alcohol dressing. 7. Tetanus antitoxin. *Hoag.* 307

Book Reviews

LEITFADEN DER ERSTEN HILFE. Ein Samariterbuch von Dr. J. Lamberg, Chefarztstellvertreter der Wiener Freiwilligen Rettungsgesellschaft. Pp. 275, with 190 Text Illustrations, in Part Colored, and 1 Colored Plate. Berlin und Wien: Urban & Schwarzenberg. New York: Rebman Company, 1913.

This little book is the product of thirty years' experience in "first-aid" work, and is intended for the use of both physicians and laymen. After the opening section on the history of "first aid," it was thought advisable to insert about 50 pages on the anatomy and physiology of the human body, in order that the principles of first aid subsequently discussed might be the better understood by the laity. The "first-aid" directions given are for such conditions as epileptic and hysteric seizures, colic, asthma, alcoholic intoxication, sunstroke, asphyxia, poisoning by drugs and plants, and suddenly manifest insanity. The "first-aid" management of wounds of various kinds is then taken up, and next the methods of saving persons from drowning and asphyxiation by noxious gases, from death in burning buildings, and from electric currents. The terminal sections are on the means of transporting the sick and wounded, and the preparation of rooms for their reception. The work contains numerous original illustrations, and cannot fail to prove valuable in many ways.

PATHOLOGISCH-ANATOMISCHES PRAKTIKUM FÜR STUDIERENDE UND AERZTE. Von Prof. Dr. med. Richard Oestreich, Privatdozenten an der Universität und Prosektor des Königin Augusta-Hospitals zu Berlin. Pp. 304. Berlin und Wien: Urban & Schwarzenberg. New York: Rebman Company, 1913.

To cover adequately the whole of pathology in so small a work is, of course, an impossibility, and the author intends this book merely to be an auxiliary to systematic

didactic lectures on the subject. The work is practically a syllabus on pathology, much of it presenting a tabular arrangement of the text. A brief preliminary section is devoted to methods of pathologic investigation. After this is taken up the macroscopic pathology of the various morbid tissue states, including specific granulomata, and of the various individual organs of the body, followed, in turn, by the corresponding microscopic pathology, and the histologic diagnosis of stained preparations of various tissues and organs. The second half of the book is devoted to such pathologic states as syncope, asthenia; collapse, shock, dyspnea, asthma, convulsions, etc.; to morbid circulatory conditions; to inflammation in general; to disturbances of the nutritive processes, and to tumors, parasites, fever, and teratology. On the whole, the book is a good compend, and can be recommended to the student, though it should by no means be thought of as embodying all pathologic knowledge requisite even to the undergraduate.

Taschenbuch der Diagnostik und Therapie der Lungentuberkulose. Von Dr. Heinrich Gerhartz, Assistant am mediz.-poliklin. Institut der Universität Berlin. Pp. 200, with 48 Illustrations, partly in Colors, and 13 Plates. Berlin und Wien: Urban & Schwarzenberg. New York: Rebman Company, 1913.

In this concise little work are discussed, with especial attention to practical details, the various methods of diagnosis and treatment of pulmonary tuberculosis available to the general practitioner. Theoretical considerations are taken up only in so far as they are necessary for proper comprehension of the text. The work opens with discussions of the biologic methods of diagnosis, this being followed by sections on "prima vista diagnosis," lymphatic enlargements as an aid in diagnosis, palpation, percussion, auscultation, and differential diagnosis. An excellent, illustrated consideration of Röntgen diagnosis is provided, the sputum albumin test described, the clinical grouping of cases of tuberculosis discussed, and, finally, the diagnosis of the chief complications of lung tuberculosis and of the chronic tuberculous skin affections succinctly dealt with. The remainder of the book—about one-half—is largely devoted to treatment, which is divided into treatment at home and in sanatoriums. First are taken up physical methods, such as Kuhn's suction mask, followed by drug treatment, including the general use of various creosote and guaiacol combinations, the treatment of cough and vomiting, fever, night-sweats, hemoptysis, etc. Tuberculin treatment is comprehensively taken up, detailed information being given as to the dosage, preparation of solutions, the antipyretic use of tuberculin, and possible untoward effects. A valuable table in which are listed and defined the numerous different tuberculins so far used is provided. The author looks with some favor on artificial pneumothorax as a remedial measure, and describes adequately, with the added help of illustrations, its theory and practice. The terminal portion of the book contains considerable information on German resorts for tuberculous patients, climatic treatment, an index, and colored plates depicting the end-results in the v. Pirquet and Calmette tests, sputum stained for tubercle bacilli, a tuberculous pathologic lung specimen, and several X-ray plates of the chest.

The General Field

Conducted by A. G. CRANDALL

A Hazardous Occupation

Every now and then it becomes necessary for some hero to leap boldly into the raging waters and rescue some feminine in distress. With the exception perhaps of a few professional lifesavers at the seaside resorts, the same hero seldom acts in that capacity more than once. He realizes that it will require too much time to stay in training.

Towing a panic-stricken woman out of the surf requires not only a good deal of muscle, but more diplomacy.

A plucky young man on the Jersey Coast recently rescued a young lady after tremendous struggle, as a result of which the girl was able to go to her home, but the man had to go to the hospital for repairs.

Perhaps it is because of this difficulty that feminine lifesavers are reported to be scheduled for action at Coney Island. No mistaken ideas of chivalry toward the fair sex will hamper their movements.

* * *

Reassurance

Some easily frightened people have become excited over the dissemination of germs occasioned by having shoes shined by Pullman car porters who have not passed the eugenic test as to freedom from said germs. It is now stated that there are ingredients in the blacking used which do not favor the propagation of the disease germs.

This ought to be a great relief.

The apprehension experienced by a great number of people on the germ question is, in a great number of cases, more harmful than the germs themselves could possibly be. Statistics show that the internes and nurses in hospitals and sanitariums where contagious and infectious diseases are treated are no more subject to infection than they are in the hospitals where all such diseases are rigidly excluded.

A person who is apprehensive should give some competent physician the job of making an inventory of his physical assets, receiving treatment if necessary and otherwise dismissing the subject from mind.

It is unfortunate that physicians do not have more frequent opportunity to impress these facts upon the families under their charge.

* * *

Deplorable Baseness

The farmers of Wisconsin are reported to have formed a vile conspiracy and refused to ship milk to Milwaukee, because of certain hygienic requirements as to the manner in which the milk is produced.

Much indignation has been manifested over this restraint of trade, directly contrary to the benign teachings of the Interstate Commerce Commission.

This is undoubtedly due to a misunderstanding. Heretofore a farmer has supposed that it was his privilege to make such disposition of his dairy products as best suited his convenience and his finances. If he is not in

a position where he can comply with the health regulations of a large city, he naturally feels that he should utilize his milk in some other manner more consistent with his facilities and needs. Milk can be utilized in other ways with about the same degree of profit, if not more, as in shipping it in bulk for city consumption.

A prominent newspaper draws a comparison between the privileged farmer, who can withhold shipment of his milk to a city, and the large manufacturer, who is not allowed to boycott certain branches of the trade, all of which goes to show what absurd lines of argument may be expected from newspapers whose editorial policy is absolutely controlled.

The farmer will naturally continue to dispose of his products to the best advantage to himself; otherwise he will not be likely to stay in business very long.

* * *

Silence and Much of It

The president of an eastern railroad, having stated in a public speech that he considered that much of the alleged hard times now prevailing was due to extravagance in the use of automobiles, was promptly notified by a leading automobile manufacturer that he need expect no more shipments from his concern. Accordingly the railroad president proceeded to qualify his former statement, attributing hard times to a large number of extravagant habits, of which automobiling was only a small factor.

Thus is free speech handicapped at the present time.

About all a railway president can do now is to keep very quiet and exhibit as few opinions as possible. If he appears to express an idea as to the unions, and it is only logical to think that he should have some ideas on that subject, he is likely to hear of something not to his advantage, but very much the other way. Of course, he cannot make any reflections upon the traveling public, for they would travel by some other line. So for this reason the railway president is about the stillest man on the map at present.

How nice it must be to be a suffragette and be able to say what one thinks.

* * *

Exercise

Almost any therapeutic problem is a simple one compared with the prescription of an adequate amount of exercise.

It does not require a large outlay of judgment to reach the conclusion that bodily exercise carried to excess must be harmful. Owing to the difference in various mental temperaments coming before the physician, the successful prescription of exercise involves much restraint for one class and a good deal of encouragement for another. Even then the doctor must largely depend upon the patient's estimate of the real and accurate results achieved by the prescribed remedy.

A man accustomed to a sedentary life becomes alarmed about himself and consults a physician. When there is nothing much amiss, the doctor recommends exercise. Eager to secure all possible benefits, the patient pushes the exercise program to excess, and the last state of that man is worse than the first. This is a warning to the physician to be a little conservative about advising

that form of treatment. The next patient is, therefore, cautioned to proceed slowly, and, being indolent by nature, he takes all due advantage of the doctor's precaution and secures very little exercise at all.

There are a good many diet lists which are handed out by family doctors with nearly all the things one likes upon them carefully scratched out. It might not be a bad idea to have some exercise lists to be used in a similar manner, the probabilities being that the patient will not be nearly as much dissatisfied if a considerable number of the exercises indicated are prohibited.

The elderly English gentleman who precisely at such an hour walked exactly thirty minutes and then walked leisurely home again probably came as near the happy medium of this form of exercise as could be expected under average circumstances.

* * *

Making the Tobacco Habit Safe

A Paris physician says that he has discovered a method by which he can remove the nicotine from tobacco and make the tobacco habit absolutely harmless.

Various similar expedients have been devised by which the caffeine content of coffee could be eliminated, thus rendering it free from the harmful effects which it is supposed to exert upon certain people afflicted with an idiosyncrasy.

One of these products is about as likely to become popular as the other.

The pick-me-up habit is well-nigh universal, and whether the mental placidity which follows the use of tea, coffee, and tobacco compensates for certain physiological disadvantages associated with the use of these articles is a problem which up to date has apparently remained unsolved.

The simple life consists in the avoidance of all unwholesome excitements, of overstimulating foods and late hours; and yet the instance of the neurasthenic who could not sleep in her quiet, hygienic, country home, but could sleep in a room facing the noisiest thoroughfare of a crowded city, simply illustrates the perversity of human nature.

No wonder the medical literature of the world has assumed colossal proportions and the number of remedies of the world are like the sands upon the seashore.

* * *

Idle Wives

The well-known story writer, James Oppenheim, has recently discussed in one of his books the woman of wealth, whose children being cared for by competent governesses, and whose domestic menage being conducted with great skill by competent servants, has nothing to do. Naturally absolute idleness does not bring happiness, and the complications which result make up the story.

It is hard to imagine the woman with a family of children who need be idle. Only the possession of the normal maternal instinct is sufficient to provide such a woman with a great abundance of occupation.

The eccentricities of those women who seek to evade the responsibilities of motherhood for the attractions of a semipublic existence socially, or identified with some of the prevailing isms are, fortunately, not taken seriously by the great mass of the public.

Always a Menace

A revolver installed in a bureau drawer for protection against burglars seems to have a very strong propensity to go off at the wrong time. It usually happens to hit some friend of the family, sometimes by design, but usually by mistake.

Some very stringent laws on the carrying of concealed weapons have been enacted from time to time, but on the principle that every man's house is his castle all the States concede the right to keep the revolver in the house as a protection against intruders.

Far from being a protection under such circumstances, such revolvers seem to do at least five times as much harm as good, which would suggest greater restrictions upon the sale of these weapons for any purpose whatever.

Only a very few people have the coolness to employ a revolver wisely in an emergency. All others may be expected to exercise poor judgment in its use at the very time when recourse to a weapon might seem to be justified.

* * *

The Degeneration of Haiti

Very few citizens of this country have any conception of conditions which prevail in Haiti. Although this country is relatively a short distance from the Atlantic seaboard, it is a terra incognita to 99 per cent. of our population.

A century ago Haiti manifested, to a considerable extent, progress, but successive civil wars have taken away all civic incentive, so that the condition of the principal city, Port-au-Prince, as described by Rear-Admiral Chester, U. S. N., is as follows:—

"Port-au-Prince is picturesquely located at the foot of hills, where one may escape from the blistering and filthy streets to mountain resorts that would be popular if located in almost any country of the world. The city is well supplied with the most delicious mountain water, and if its 60,000 inhabitants used it as freely as do Americans it might be as clean as nature made it. As it is the city may hold the palm for being the most filthy, foul-smelling, and consequently fever-stricken city in the world. The gutters of the streets, which may be said to cover the whole roadbeds, are filled with stagnant waters and are used as cesspools by the people. But for the torrential rains, which pour down the mountain sides and carry off all the filth into the beautiful bay, even a Haitian could not live there. The water of the harbor is so bad that it cannot be used even for scrubbing the decks of the ships."

Undoubtedly, sooner or later, this place, politically, morally, and hygienically, will have to be cleaned up and it will be the thankless job of the United States to do it. Conditions in this island are but the logical results of the unstable system of the government. Under such conditions there can be no incentive for private or public improvement.

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Original Articles and Summaries of Selected Articles

EXOPHTHALMIC GOITER AND DIABETES.*

BY PAUL SAINTON, M.D., AND PAUL GASTAUD, M.D.,
PARIS, FRANCE.

THE authors have met with 3 instances of diabetes among 90 cases of exophthalmic goiter, and after an extensive search in literature have found altogether 60 cases presenting this combination of conditions. They estimate the frequency of diabetes in exophthalmic goiter as 3 in 100 cases. It is undoubtedly a fact that diabetes occurs much oftener in cases of hyperthyroidism than among patients with hypothyroidism, in which it is quite rare, as Parisot has shown.

Clinically, diabetes occurring in the course of Graves's disease is manifested in two ways, viz.: (1) as a temporary or slight glycosuria, with the usual symptoms of diabetes only present in a trifling degree; (2) as a well-established condition, with all the characteristic symptoms present, the latter frequently even dominating the clinical picture as a whole. In the first group of cases slight thirst, or a slight increase in appetite, or a feeling of weakness is at times responsible for the examination of the urine which leads to the discovery of the glycosuria. The amount of sugar excreted may be small, *e.g.*, 3.4 to 5 Gm. in one of the author's cases, with a total daily urinary output of 1500 c.c. In the second class of cases, on the other hand, the diabetic disorder is unusually severe, 8 to 14 liters being sometimes excreted daily, and the amount of sugar eliminated ranging from 340 to 1000 Gm. a day, or even attaining higher figures, such as are hardly met with in any cases other than those of pituitary diabetes. Polyphagia, polydipsia, and

* Summary of article in Bulletin médical, July 23, 1913.

other symptoms are pronounced. It seems to be a uniform rule that in severe cases of Basedow's disease severe diabetes exists, while in mild Basedow cases slight and evanescent glycosuria occurs. In most cases diabetes appears as an epiphenomenon in the course of exophthalmic goiter, and a long time after its onset. Where both conditions have become established, a state of equilibrium seems to occur between them, viz.: when the Basedow condition becomes worse the diabetes improves, and *vice versâ*. The prognosis varies in different cases. Mild diabetes in Basedow cases runs a course quite like that of arthritic diabetes, presenting the same intermissions and low degree of intensity. In severe forms, on the other hand, the combination of the two diseases constitutes a condition of exceptional gravity. In the series of cases collected by Sattler, 25 patients rapidly succumbed—7 of them in coma. Sometimes, as in one of the author's own observations, pulmonary tuberculosis is superadded, further aggravating the prognosis and hastening death.

The combination of diabetes and exophthalmic goiter may be complicated by other syndromes, as in the cases reported by Lancereaux, Henrot, and Murray, in which acromegaly was added to form a triad of conditions. In a case of Rennie the third component of the triad was myasthenia gravis. In one of the author's own cases myopathic and osseous disorders, the latter of the type of Paget's disease, rendered the interpretation of the symptoms singularly difficult. In diabetic Basedow cases of the female sex signs of ovarian insufficiency are at times noted; in one patient the menstrual period was clearly instrumental in causing glycosuria either to reappear or to become more marked.

On the whole, the association of Basedow's disease and diabetes cannot be considered a fortuitous phenomenon. That a bond of some kind unites the two conditions can readily be shown. Their mutual relationship is brought to light when one sees exophthalmic goiter and diabetes alternate in the different members of the same family. Manby has reported 3 striking instances of this. In one family, the father and brother of a Basedow patient are diabetic; in a second, the sister of a Basedow patient is diabetic, and her brother's two children have been carried off by acute diabetes. In the third instance, the two sisters of a Basedow patient succumbed to diabetes at the ages of 9 and 10, respectively. In a case of Pibrane, and in one of the author's, the father of the Basedow patient was diabetic. Finally, in still another case the patient's aunt had diabetes and her cousin exophthalmic goiter. The inverse relationship in the severity of the two disorders in the same individual, already referred to, is also evidence in favor of their mutual dependence.

What is the mechanism of this diabeto-Basedow syndrome? Pathology as yet yields only incomplete testimony in this connection. A systematic study of the ductless glands in such a case has never been conducted. The lesions mentioned as having been found have been as follows: (1) In several cases the liver showed slight fatty changes; (2) the condition of the pancreas varies; in Murray's case it showed marked sclerosis and disap-

pearance of the islets of Langerhans, while in those of Sougues and Marinesco and of Lépine it appeared normal. In the observations of Henrot and Murray, where acromegaly was superadded, the pituitary was enlarged; in the others its condition was not noted.

In spite of the lack of evidence, the pathologic physiology of Basedowian diabetes can be at least tentatively conceived. Glycosuria of thyroid, adrenal, and pituitary origin are known to occur, though their precise relationships to the pancreatohepatic apparatus cannot be stated. The first thought coming to mind upon seeing diabetes appear in a case of exophthalmic goiter is that it is dependent on the excessive thyroid functioning. The following facts are in favor of this idea: Clinically, thyroidism brought on by thyroid feeding has been observed to induce glycosuria in a number of subjects, whether myxedematous (cases of Béclère and Ewald) or obese (cases of Notthaft and von Noorden). Basedow symptoms and glycosuria even appeared simultaneously in Notthaft's case following the ingestion of thyroid gland. In the period when patients with exophthalmic goiter were treated with thyroid gland, temporary glycosuria was not infrequently observed. Even, at times, there supervened a full-fledged diabetes, as F. Müller reports, his patient having died in coma. Thyroid treatment thus brings about intolerance of carbohydrates, at least in a certain category of individuals (obese, myxedematous, and with exophthalmic goiter). In healthy human subjects and in the lower animals attempts have been made to demonstrate this intolerance by the test of alimentary glycosuria; likewise in Basedow cases. The results, however, have been contradictory. In the animals they were inconstant. Among 20 normal human subjects Bettmann noted prompt passage of the sugar into the urine 11 times, while Strauss and Marwin observed it only in barely 5 per cent. of the cases. Among Basedow cases, whereas Krauss, Chvostek and Hirschl, and von Noorden found the test positive in half their cases, Diénot, Goldschmidt, Strauss, Rathery, and the authors observed this less frequently—at most in about 15 per cent. of the cases. Likewise in favor of the thyroid theory are the lesions of this gland noted by Carnot and Rathery in diabetics and the improvement reported by Lorand in cases of diabetes upon administration of sera from thyroidectomized animals.

Summarizing the above facts, the conclusion cannot be escaped that the participation of hyperthyroidism in the production of diabetes is extremely probable.

Other glandular theories may, however, be put forth, and these must be passed in review. Among them is the adrenal theory. Cases in point are uncommon, and the authors know of but one instance in which a patient afflicted with both exophthalmic goiter and Addison's disease showed temporary glycosuria (personal case). Discussion of the possibility of participation of the adrenals in such a glycosuria is rendered necessary by the fact that the Vienna school (Eppinger, Falta, and Rüdinger; Eppinger and Hess; Krauss and Friedenthal; Asher) maintains the thyroidoadrenal origin of exophthalmic goiter. This theory is based on the relations sup-

posed to exist between the thyroid, pancreas, and chromaffin system. In hyperthyroidism there would occur inhibition of the pancreas and stimulation of the adrenal function. The theory offers a plausible explanation of the clinical association in question, it being merely necessary to conceive that, by reason of the pancreatic and thyroidoadrenal antagonism, the disturbance of pancreatic function might extend to complete suppression of glycogenesis. This theory is widely discussed. It has not been proved, indeed, that an increase of adrenal secretion takes place in Basedow's disease; epinephrin is not constantly present in such cases; finally, the association of hyperthyroidism with Addison's disease is hardly in favor of this conception. Basedow cases, moreover, do not show any constant change in the blood-pressure. True, Asher has noticed that in certain subjects with thyrotoxicosis the injection of ¼ to ½ mg. of epinephrin leads to glycosuria. Further investigation is required, however, to confirm the validity of this test. Thus, on the whole, it is difficult to establish the responsibility of the adrenals in the production of diabetes among Basedow cases.

Such is not the case, however, when one looks up a possible rôle of the pituitary in this direction. The reported cases of coincident exophthalmic goiter, acromegaly, and diabetes afford firm support for this theory. Even clinically, there is a marked resemblance between the severe Basedowian diabetes cases and cases of pituitary diabetes. Pituitary diabetes may show itself in the absence of acromegaly. All authors are agreed that it is due to hyperpituitarism. Claude and Baudoin, in a series of researches, found that in a certain proportion of subjects,—arthritic and obese cases,—after meal-time alone, glycosuria appeared after the injection of pituitary extract. Comparison of these cases with those of glycosuria following thyroid treatment in obesity is of interest in this connection. Clinically and experimentally, there is thus a considerable analogy between Basedowian diabetes and glycosuria, on the one hand, and pituitary diabetes and glycosuria, on the other.

From the above it seems justifiable to assume that in diabetes coupled with exophthalmic goiter two internally secreting glands may be tentatively held responsible, viz., the thyroid and the pituitary. Can one conceive that these two influences are simultaneously operative in the production of Basedowian diabetes? Such a combination seems not unlikely, in view of the close functional synergism existing between the two organs named. As for the more precise mechanism of the glycolytic process taking place, the question arises whether the hypophysis and thyroid cause, through insufficiency in their functions, some disturbance in virtue of which the sugar is no longer retained in the liver. If they act through the pancreas, is this action exerted through the intermediation of the sympathetic system or through a hormone? These are further problems in general pathologic physiology which the association of diabetes with exophthalmic goiter brings up for future solution.

ADRENAL VIRILISM.*

By PROF. TUFFIER,

PARIS, FRANCE.

Under the term adrenal virilism is to be included a group of disorders in somatic development characterized either by precocious virility in the child or by the assumption of a masculine appearance by a woman, even after the menopause, under the influence of a tumor or secretory disturbance of the adrenals. The author presents the following example of the second variety:—

A woman of 62 years was admitted on Dec. 16, 1913, for abundant metrorrhagia. Full-blooded and sturdy, she showed upon examination all the physical signs of a large fibroma; but surgical intervention was contraindicated by the 70 Gm. of sugar found in the patient's urine. A striking feature of the case was an unusual hirsuties. After treatment for her glycosuria the patient was readmitted on Jan. 19, 1914, showing only 6 Gm. of sugar in the urine and being in a favorable state for operation. At this time she was observed (not having shaved for some time) to have an extensive black beard and mustache. There was slight exophthalmos. There was baldness of the frontoparietal regions,—a condition almost exclusively seen in men. The pitch of the voice and the conformation of the limbs, which showed a high degree of muscular development, as well as their relative length, were altogether of the masculine type. On the forearms and hands yellow spots, almost confluent, were to be seen. The clitoris was found enlarged, measuring about 4 cm., and was covered by a well-developed prepuce.

Inquiry from the patient elicited the fact that these unusual physical features had developed since the menopause, and photographs taken before that period showed this to be true. Her habits were also changed; she was now occupied exclusively with manual tasks such as ploughing and hoeing, which caused her no fatigue. In the patient's previous history nothing unusual was found except that she was one of a pair of twins. She had never borne a child and presented no evidence of any previous organic affection. The thyroid gland was normal. The blood-pressure (Pachon instrument) was 200 mm. (systolic). The cerebrospinal fluid was normal and issued from the needle drop by drop. No signs of increased intracranial tension were present, and papillary stasis proved absent upon examination of the retina. Upon X-ray examination the sella turcica appeared normal. The pelvis was of the female type.

Upon operative intervention a condition perhaps the cause of the patient's peculiar bodily features was found. Celiotomy on Feb. 3, 1914, led to the discovery of a uterus of the size of a fetal head, formed by mus-

* Summary of article in Bulletin de l'Académie de Médecine, May 26, 1914.

cular bundles similar to those of pregnancy. A subtotal hysterectomy was done, followed by uninterrupted recovery and by complete cessation of the glycosuria within three months after the operation. Examination of the region of the adrenals during the celiotomy revealed there a bilateral mass equal to the half of a kidney in size, situated over the adrenal bodies, and of a fibrolipomatous consistency.

Study of the tissues removed at the operation showed the left ovary atrophied, the right ovary, however, exhibiting a tumor of the size of a large walnut. The uterus was as large as though four months pregnant. Split in the median line, it showed no fibroma or tissue sclerosis, but muscular bundles of the size met with in pregnancy; the mucous membrane was unaltered. This combination of a simple hypertrophy of the uterus with metrorrhagia in a woman of 62 was already suggestive. The ovarian tumor was found soft, hemorrhagic, and devoid of vegetations or cysts, and presented an appearance not previously met with by the author. After protracted discussion, and after having for a time believed that the tissue represented an aberrant adrenal body, it was finally decided to constitute a neoplasm originating in the ovary itself from the lutein cells.

The aggregate of this and similar cases represents a clinical type, already known to the ancients, designated as hirsutism by Appert and as adrenal virilism by Gilbert Ballet and Gallais. Met with chiefly in female children, its signs are remarkably uniform. Hypertrichosis of masculine type is the most constant sign, having been recorded in 30 out of 32 cases; muscular hypersthenia is also the rule, even in adults. Hypertrophy of the external organs of generation has been found in 40.62 per cent. of instances.

This excessive functioning of the adrenals is differently manifested according to the age of the patients. In children it greatly accelerates growth, as in a case of Dun, where a child 5 years old appeared to be 14, with hypertrichosis, more especially on the back and in the genital region. In Walker's case a girl of 7 had the stature of a man of 20 and showed hairy development resembling that of an adult male. In a case of Herbert a child only 18 months old began to show hypertrichosis. Results are far different in adults, and especially after the menopause, when the associated metabolic changes can influence only certain organs, and produce merely hypertrichosis, hypersthenia, and hypertrophy of the reproductive organs.

Between the extreme case above reported and the normal condition there must exist a transition series of cases of biologic deviation due to adrenal changes. Recognition of these should be practicable in clinical medicine. The manifestations of virilism should draw attention, in a given case, to the possible presence of an adrenal tumor which, thus early detected, may be successfully dealt with.

OPOTHERAPY IN CHRONIC OSTEOARTHRITIS.*

By PERCY WILLARD ROBERTS, M.D.,
NEW YORK, N. Y.

The essentials of treatment followed in the author's cases of chronic osteoarthritis were the administration of glandular preparations, rest, a diet reducing the intake of calcium, and the use of the d'Arsonval or bipolar high-frequency current. Of the glands which have a direct influence upon nutrition, he points out, three stand out in clearly defined prominence, viz., the thymus, the thyroid, and the pituitary, each of which has its place in the treatment of osteoarthritis. It should be borne in mind that no single one of these glands meets all the requirements of a regulator of metabolism under all conditions.

The thyroid, most widely known, is least often indicated in osteoarthritis. It is seldom of value alone, but may be useful in conjunction with other glands where there has been a recent marked increase in weight. When given it should be carefully carried to physiologic limits and the dose then considerably reduced and continued at that point over a long period.

Thymus gland has longer stood the test than the others. It is slow in action, but undoubtedly has a beneficial effect upon the course of osteoarthritis, whether of the metabolic type described by Nathan and in which it was first used, or in the chronic conditions following low-grade infections. It should be given in doses of 10 or 15 grains, three times a day, over a period of many months. It is contraindicated only in cases in which there has been a rapid increase in weight, as at times it stimulates general nutrition to an unusual extent. The gland deteriorates rapidly; therefore, fresh preparations are essential. The powder, sealed in capsules at the laboratory, is perhaps the most reliable form for administration. The powder dispensed in bulk is of very uncertain strength. Disappointment in the use of thymus is frequently due to its slow action. It should not be abandoned before six months of continuous use.

Pituitary body has shown some very encouraging results, Wallace having used 1 per cent. and 2 per cent. solutions of the whole gland intramuscularly with the result, in many cases, of striking improvement in pain and joint swelling. The dose is 1 c.c., injected daily, using a 1 per cent. solution for two weeks and then a 2 per cent. solution. Uranalyses should occasionally be made for sugar, and the blood-pressure should be observed from time to time. Tablets of the whole gland will sometimes effect the same results as solutions, but are apparently not quite so dependable. The posterior lobe alone does not seem to have any decided influence upon joints, but the writer has used capsules of powdered anterior lobe, sealed at the laboratory, with beneficial effect. The anterior lobe used in conjunction

* Summary of article in the Medical Record, May 9, 1914.

with thymus appears to have a greater influence than thymus alone. The dose is 2 grains, three times a day, in capsules which have been sealed at the laboratory.

PATHOLOGIC CHANGES OF THE THYROID IN DISEASE.*

By RUPERT FARRANT, F.R.C.S. Eng.,

LONDON, ENGLAND.

The object of the author's paper is to point out those diseases and toxemias that do, and those that do not, produce an alteration in the thyroid, to describe these changes, to compare them with those seen in goiter, and to note when they become associated with signs of thyroid excess. His work was based on some 700 thyroids obtained from post-mortem examinations during the preceding five years, together with some from guinea-pigs after inoculation. From the observations made it was found that the thyroid changes produced are dependent on the amount, virulence, and duration of the toxemia. The diseases and toxemias may be divided into three groups; in the first are those that produce no effect on the thyroid, in the second those that produce a colloid hyperplasia, and in the third those that cause a complete or acute hyperplasia.

Group 1. Diseases that Produce No Effect.

Bacilli: Typhoid.

Cocci: Gonococcus (?), pneumococcus, staphylococcus aureus, staphylococcus albus, streptococcus equinus, streptococcus fæcalis, streptococcus puerperalis, streptococcus rheumaticus, acute surgical infections.

Protozoa: Coccidiosis.

Diseases due to unknown micro-organisms: Polyserositis, carcinoma, sarcoma.

Gland diseases: Addison's disease, diabetes, jaundice.

Blood diseases: Lymphadenoma, lymphatic leukemia.

Group 2. Diseases that Induce a Chronic or Colloid Hyperplasia.

Bacilli: Coliform (chronic in man), tuberculosis (chronic).

Cocci: Micrococcus melitensis (goats), meningococcus (slight).

Protozoa: Syphilis (tertiary).

Streptothrix: Actinomycosis.

Diseases due to unknown micro-organisms: Acute anterior poliomyelitis, rheumatic fever, scarlet fever.

Gland diseases: Chronic nephritis.

Blood diseases: Pernicious anemia.

Group 3. Diseases that Produce a Complete or Acute Hyperplasia.

Bacilli: Aërogenes capsulatus (?), anthrax, coliform (acute, guinea-pigs), diphtheria (man), diphtheria toxin (horses, guinea-pigs), dysentery (sylum), dysentery (Flexner), dysentery (Shiga), Gaertner, mallei, tetanus, tuberculosis (acute).

Cocci: Micrococcus catarrhalis.

Protozoa: Syphilis (secondary), malaria.

* Summary of article in the Lancet, March 7, 1914.

Diseases due to unknown micro-organisms: Measles, broncho-pneumonia, small-pox, whooping-cough.
Gland diseases: Chronic nephritis, cirrhosis of liver.
Artificial toxemias: Abrin, ricin, diphtheria toxin.

From tuberculosis it was concluded that the toxemias of Group 3, when mild in character, may produce a colloid instead of a complete hyperplasia; but that no alteration in Group 1 can enable them to have the effect of either Group 2 or 3.

Diphtheria may be taken as an example of the acute toxemias that act on the thyroid. The stages of the production of acute hyperplasia were illustrated by 4 thyroids taken from cases dead on the fourth, seventh, seventh, and twelfth days. The colloid becomes granular and then finally disappears, the walls of the vesicles become infolded, the outline indistinguishable, and the cells columnar in shape. The thyroids of the acute infections can be arranged in order; the degree of hyperplasia corresponds to the duration of the disease.

The involution of acute hyperplasia can be seen from specimens obtained after injection of sublethal doses of toxin or micro-organisms into guinea-pigs and of diphtheria toxin into horses. The vesicles are re-formed by the direct transformation of the cells into colloid; they are small at first, but as fresh colloid is formed they enlarge and the cells become flattened; extravasated blood is transformed into fibrous tissue. At the termination of the process there is destruction of tissue with fibrosis. The fibrosis is the most marked feature after an acute hyperplasia, but excessive colloid formation after complete hyperplasia.

Production of Colloid Hyperplasia.—A complete thyroid circle can be traced over a period of years in cases of tuberculosis. Six thyroids were demonstrated on one slide and the contrast shown of the complete hyperplasia produced by miliary tuberculosis and of the colloid hyperplasia by the chronic. Three stages may be described in colloid hyperplasia: in the first the vesicles are small in size and the colloid coarsely granular, with cell proliferation; in the second the vesicles are of unequal size and packed with colloid; the cell proliferation is squeezed up between them; finally, the thyroid becomes cirrhotic, with deficiency of thyroid tissue. Colloid hyperplasia is found in three separate conditions: during the involution after an acute toxemia, during the production, and during the involution after chronic toxemia.

Comparison with Goiter.—There are two main differences between the hyperplasias of the toxemias and those of goiter: (1) the hyperthyroidism of exophthalmic goiter when compared to the complete hyperplasias of the toxemias; (2) the alteration in size seen in endemic goiter as compared to that of the chronic toxemias.

Repeated and Double Toxemias.—Repeated injections of diphtheria toxin lead not only to the production of thyroid hyperplasia, but also to the formation of antitoxin. From observations on 15 horses it was found that the hyperplasia decreased as the antitoxic value of the serum increased.

This can be applied to the extent of saying that it is probable that the toxemias that are counteracted by the formation of antitoxin only produce a thyroid hyperplasia when antitoxin is absent or deficient. Guinea-pigs were inoculated with a second toxemia before recovery was complete from the first; it was found that there was an increase in the hemorrhagic hyperplasia. The supervention of miliary tuberculosis on chronic is an instance of an acute toxemia acting on a chronic; the extreme hyperplasia produced in such a case was shown; the case developed exophthalmos before death. Cirrhosis of the liver is an example of a subacute toxemia that develops on a chronic at the onset of ascites; exophthalmos was present in 10 out of 12 cases. Barker and Levison have noted the occurrence of exophthalmos in cases of interstitial nephritis. These examples of the occurrence of exophthalmos are of importance in that they serve to bridge over the gap between the thyroid changes and hyperthyroidism of the toxemias and those of goiter. These considerations enable one to trace the effect of the diseases on the thyroid from birth upward, and lead to the prevention, production, and cure of certain thyroid conditions.

THE ASSOCIATION OF UTERINE GROWTHS WITH GOITER; TYPICAL AND ATYPICAL EXOPHTHALMIC GOITER.*

By HENRY L. ELSNER, M.D.,

SYRACUSE, N. Y.

The unusual frequency of uterine growths with thyroid abnormalities, more particularly with the various forms of goiter, typical and atypical exophthalmic goiter, is pointed out by the author. Among the case histories presented to support his contentions is one including sensory symptoms, analgesia, thermoanesthesia, the typical picture of syringomyelia, cystic ovary, uterine fibromyoma, goiter, acromegaly, granuloma, trophic changes, invasion of the sympathetic system, multiple cutaneous pigment deposits, fibroid growths, and urinary anomalies. The patient was a housewife aged 52 years; weight, 242 pounds; normal weight, 150 pounds. Twenty-one years before, she had noticed a peculiar sensation in the index and middle finger of the right hand, later extending into both arms, so that finally both hands were more or less numb, and there was occasionally cramping. Twelve years before, the diagnosis of uterine fibroid had been made; later it was found that she had a large ovarian cyst, with a fibroid uterus. Five years before, the cyst, weighing 28 pounds, had been removed, and also the fibroid uterus. She menstruated but once after the operation. One year after the operation her hands became analgesic and thermoanesthetic. Three years before she was seen, the characteristic growth of acromegaly had

* Summary of article in the American Journal of the Medical Sciences, May, 1914.

become noticeable. The greater changes were in the small bones of the face, including the jaw; also in the hands and feet. The tongue was enormously thickened, broadened, and when protruded covered an unusually large area, and was 3½ inches broad. Just back of the upper teeth, springing from the buccal mucosa, was a large granuloma. Almost immediately after the operation a double goiter developed, larger on the right side than on the left, both lobes presenting a prominence about the size of a grapefruit. Perspiration was excessive and erratic. She was very much depressed; pulse, 88; respirations, 18; temperature, 98.2°; blood-pressure between 90 and 100 mm. Hg (systolic). The prompt development of the goiter after the surgical operation in this case was stimulated unquestionably by the removal of the organs of generation. There was also noted invasion of the kidneys, probably as a limited parenchymatous nephritis, with an unusually high uric acid content of the urine, while the urea was comparatively low. With these conditions there was a gradually increasing arteriosclerosis.

There is a decided tendency to disregard atypical cases of exophthalmic goiter, and they often remain unrecognized. Cautious clinical study proves the frequency of what Stern has called Basedowoid cases. These are atypical, but they include a sufficient number of typical symptoms to justify the diagnosis of thyroid perversion. There are a large number of cases associated with distant changes in which there are but one or two symptoms of thyroid disturbance. These cases justify the conclusion that much of the ill health of the patient is due to perverted secretion. A study of thyroid disease emphasizes the fact that there are periods of latency during which there are practically no symptoms save a goiter, large or small. These periods are followed by exacerbations, including positive symptoms of hyperthyroidia, and, in some, marked changes in the arterial tree. The author has seen a number of cases of suddenly developing thyroid perversion, with associated uterine growths, in patients who had gone to middle life and far beyond without subjective disturbances, and in which the sudden onset of symptoms entirely ungeared the patient.

It may be positively assumed that in the presence of goiter, whatever the previous history may have been, symptoms may suddenly develop referable to such growth; some of these cases may lead to acute and serious cardiac insufficiency, in others to paroxysmal seizures, and in the third class of cases to continuous symptoms of thyroid perversion.

The hereditary tendency in goiter and the uterine myomas is often striking. The author has 2 sets of cases of this combination of lesions. One series was found in a family of 7 daughters, in which a number of aunts and cousins on the father's side had goiter. The mother of the 7 daughters presented a negative history so far as goiter and uterine growth were concerned. Of the 7 daughters, 6 had palpable uterine myomas, and 5 had had hysterectomies performed. Four of the 6 sisters had palpable and prominent goiters; 1 required thyroidectomy after hysterectomy. In the second series of cases there were 2 sisters, the daughters of a mother who had a large goiter, both suffering from typical exophthalmic goiter. In both the uterus was the size of a large grapefruit, and was fibromyomatous.

The influence of the removal of the goiter upon the uterine mass is practically negative. In none of the cases seen did thyroidectomy or ligation of the thyroid artery show the slightest influence on the size of the uterine growth or the symptoms dependent upon its presence.

In some cases there were found multiple fibroid growths in various organs of the body. In one there were multiple pigment deposits in the skin covering the thorax and abdomen, and a large crop of pedunculated cutaneous fibroids.

The symptoms dependent upon the uterine growth with thyroid enlargement are variable, and not materially different from those associated with the uncomplicated cases. In the presence of thyroid enlargement and uterine growths operation on one of these organs does not materially influence the progress of the growth in the other, nor the associated symptoms, save as the general condition of the patient is improved by the removal of an impediment and the source of toxemia.

A large number of uterine growths are associated with tachycardia and other circulatory anomalies. In some of these cases there is a palpable thyroid; in others no evident enlargement of the gland. In some an apparently normal thyroid may become tender and slightly enlarged during the presence of tachycardia. There may be localized tenderness, with slight enlargement of one lobe of the thyroid. In all of these cases one must investigate cautiously to determine the factor which has ungeared the circulatory system. In the presence of several of the symptoms of hyperthyroidia or perverted functions and the absence of other causes, though there is no evident goiter, the author would favor strongly the thyrogenous origin of the tachycardia.

CLINICAL STUDIES ON THE CURATIVE ACTION OF LEUCOCYTE EXTRACTS IN INFECTIVE PROCESSES.*

By PHILIP HANSON HISS, Jr., M.D.,
AND
JAMES GARFIELD DWYER, M.D.,
NEW YORK, N. Y.

In many infections the ultimate weapons of defense of the system are the leucocytes, either in their normal state, acting as phagocytes, or possibly when breaking down in the circulation or in exudates. In 1908 Hiss investigated the effect of leucocyte extracts on infections artificially produced in animals and, with Allen and Zinsser, tested the extracts on human patients suffering from various infections. The conclusion drawn from these tests

* Summary of article in the Medical Record, Sept. 13, 1913.

was that leucocyte extract is an aid in overcoming infections due to such organisms as streptococci, staphylococci, the pneumococcus, meningococcus, and even other infections in which the leucocytes are not known to play such an important part in the resistance offered by the system. Later, Dwyer published a clinical report of 6 cases thus treated, and attributed the success attained in them to the influence of the extract.

The method of obtaining these substances is as follows: Rabbits, of 1500 Gm. weight, or heavier, receive intrapleural injections of aleuronat. This is prepared by making a 3 per cent. solution of starch in meat-extract broth, without heating, and adding to this, after the starch has gone into thorough emulsion, 5 per cent. of powdered aleuronat. This is thoroughly mixed, boiled for five minutes, and filled into sterile potato tubes, 20 c.c. into each tube. Final sterilization is effected preferably in an autoclave. The rabbit injections are carried out by injecting 10 c.c. into each pleural cavity in the intercostal spaces at the level of the end of the sternum, in the anterior axillary line, great care being exerted to avoid puncturing the lungs. The rabbits are left for twenty-four hours, at the end of which time a copious and very cellular exudate will have accumulated in the pleural cavities. After killing the animals, this is removed by opening the anterior chest wall under rigid precautions of sterility, and pipetting the exudate into sterile centrifuge tubes. Immediate centrifugation before clotting can take place then permits the decanting of the supernatant exudate fluid. To the leucocytic sediment is then added about 2 c.c. of sterile distilled water, and the emulsion is thoroughly beaten up with a stiff bent platinum spatula. Smears are now made on slides, stained by Jenner's blood stain, and examined for possible bacterial contamination. It is well also to take cultures. Sterile distilled water is then added to each tube, about 10 volumes to 1 volume of sediment, and the tubes are set away in the incubator for seven or eight hours. At the end of this time the sterility is again controlled, and further extraction in the refrigerator continued until the extract is used. The preparation appears to remain active indefinitely. Before use it is thoroughly shaken to disseminate the sediment, which is then drawn into the syringe and injected along with the fluid into the animal or patient.

Since their earlier reports the authors have treated a series of over 300 patients suffering from various infections. In the present paper the results obtained in erysipelas are alone considered.

The series of erysipelas infections treated comprised 148 cases of all types and grades of severity. The majority of the infections were secondary to operative measures, while the others were of the so-called idiopathic form. The great majority were of the most severe type, the ordinary remedies having already been tried, and the infection being well established and the systemic symptoms marked.

The results obtained were so constant and marked that, judging from them, it would seem that in this disease one can almost prognosticate the results following the use of leucocyte extract. In every case there was a marked reaction, in most cases shown by a fall in temperature and a rapid

improvement in the general condition. In practically all the cases the symptoms disappeared within a few hours following the first injection of the extract; the headache, nausea, and vomiting disappeared, the mind became perfectly clear, and from a depressed, apprehensive state the patient passed into one of comparative comfort, free from anxiety. The effect on the temperature varied with the class of patient and with the time elapsed between the onset and the beginning of treatment; in those treated early—within twenty-four or forty-eight hours of the onset—there was a sharp fall in the temperature curve and the disease ended practically by crisis; the accompanying symptoms disappeared and the rash ceased to spread. In the cases treated later in the course of the disease there was not usually so marked an effect on the temperature, but the change in the general condition was just as marked, and the disease cut short.

Locally, in all cases, whether treated early or late, the burning and aching pain disappeared in a few hours. There was generally some further spreading, but the character of the lesion changed. The vivid crimson rash usually seen in an otherwise healthy patient soon faded. The dull purplish rash, seen in the deeper erysipelas infections or in the asthenic type of patient, soon gave way to the bright crimson form, and this in turn faded away gradually. In the latter class of patients, where a severe infection was present with the corresponding systemic symptoms and a low temperature curve, a moderate rise of temperature at times occurred after the infection. This was looked upon as a favorable sign and as an evidence of increased resistance.

The duration of an average case of erysipelas under the routine measures of treatment is about ten to fourteen days. In the author's series of cases the average duration, whether treatment with the extract was instituted early or late, was three and one-tenth days after treatment was begun.

In practically all cases, following the use of the leucocyte extract, had it not been for the mere physical presence of the disease focus, the patient would have been considered well. The extract took the place of all stimulation, and patients suffering from the most severe infections were kept entirely comfortable by its use alone. Most of the infections were complications of operations on the eye, ear, nose, and throat. Under the treatment used the healing, instead of being delayed as usual, was hastened, and was complete in a much shorter time than in an uncomplicated case. This refers especially to mastoid wounds, and is directly contrary to the usual experience with such wounds, where often following erysipelas it is necessary to do a secondary operation to clean out the flabby, unhealthy granulations.

Adrian Lambert has treated about 50 cases of erysipelas with extract supplied by the authors. His conclusions are as follows:—

1. Leucocyte extract will abort infections that are treated with it within the first forty-eight hours.

2. It will ameliorate the course of older infections and may abruptly terminate them. The longer the infection has existed, the less likely is the latter to take place, but the measure tends to shorten the course of the disease.

3. The toxic symptoms, delirium, headache, nausea, and vomiting, are modified and relieved; local pain is lessened.

4. The rash does not disappear immediately, but is apt to be localized.

5. Spreading intractable lesions of the back and body are apparently affected as readily as those occurring on the face and head.

6. Pus formation is aborted and sequelæ are rare, if they occur at all. About 50 per cent. of babies under 1 year of age recovered from erysipelas.

STATISTICAL ANALYSIS OF ERYSIPELAS CASES. (*Hiss and Dwyer.*)

Age of Patient	No. of Cases	Time of Treatment	Average Duration of Treatment	TERMINATION OF CASES	
				Recovery	Death
Infants (up to 1 year)	...	Early* 5	4 days	3	2
	12	Late 7	6 "	5	2
Children (1 to 15 years) ...	...	Early 5	1.5 "	5	
	14	Late 9	3 "	9	
Adults (15 to 50 years)	...	Early 44	2.2 "	44	
	110	Late 66	3.5 "	66	
Over 50 years	12	Early 5	1.5 "	5	
		Late 7	3.7 "	6	1
Total	148	Early 59	2.3 "	57	2
		Late 89	4.05 "	86	3

* Early—Treatment begun within 3 days of appearance of lesion.
Late—Treatment begun later than 3 days after appearance of lesion.

RECAPITULATION.

Total number of cases treated = 148; recovered = 143; mortality = 3.39 per cent.

General average duration of treatment = 3.18 days.

Number of recoveries in patients under 1 year old = 8 out of 12.

Mortality among patients over 1 year = 0.73 per cent.; recoveries = 99.27 per cent.

HYPOTENSOR ACTION OF CERTAIN EXTRACTS OF THE PITUITARY.*

BY HENRI CLAUDE, M.D., AND RENÉ PORAK, M.D.,

PARIS, FRANCE.

THE cardiovascular actions of pituitary extracts are less constant than those of adrenal extracts, with which they have been compared. Scymonowicz has shown that the increase of blood-pressure produced may be preceded by an initial stage of lowered pressure, while Schäfer, Halliburton, and others have observed that upon giving repeated injections of pituitary

* Summary of article in Presse médicale, January 10, 1914.

extract the blood-pressure-raising effect of the latter disappears and is often replaced by a lowering of the pressure. These observations tend to show that, besides blood-pressure-raising substances rightly or wrongly assimilated to epinephrin, there may exist in pituitary extract substances that lower the blood-pressure.

In general, glandular extracts consist of a complex mixture of substances intended for secretion and of organic products originating from the glandular tissue. The functional activity of a gland may, therefore, be masked through the toxic effect produced by the organic products, and this accounts for the conflicting descriptions to which study of the glandular extracts has given rise. Gley has strongly emphasized these facts, describing, for example, phenomena of crossed anaphylaxis which show clearly the presence of like toxic substances in different glandular extracts (these phenomena consisting of rapid immunization to one organ extract by an extract from another organ). Organotherapy can henceforth progress only by giving up whole extracts of organs in favor of the products secreted by the organs. This end may be attained either by collecting the blood issuing from the internally secreting glands—a method generally difficult, and in particular as regards the hypophysis—or by resorting to chemical procedures having as their aim to isolate from the extracts certain products secreted by the glands.

It is a striking fact that most of the attempts made in the line just mentioned in reference to the pituitary have yielded substances possessed, not of the blood-pressure-raising action of whole extracts of the organ, but of a strong hypotensor action. It would appear that in the course of some chemical manipulations the pressure-raising substances in part disappear, while the pressure-lowering substances persist more or less completely and secure a preponderant rôle in the action of the drug. Howell had already noticed that, upon macerating pituitary extract in alcohol, the latter dissolved out the hypotensor substances, while the pressure-raising substances remained behind in the albuminous clot. Houssay, of Buenos Ayres, claims to have isolated the active principle of the pituitary in the following manner: After prolonged and repeated boiling of the extracts of hypophysis he treats the filtrate in succession with lead acetate, sulphuric acid, and hydrogen sulphide; the resulting white, crystalline body is the active principle referred to. H. Claude and A. Baudoin have described a procedure for isolating secretory products of the hypophysis. Posterior pituitary lobes, dried in vacuo, are extracted with chloroform, and the greater part of the proteins then coagulated with dilute alcohol.

The substances isolated, respectively, by Houssay and by Claude and Baudoin appear to have a similar cardiovascular action, causing a lowering of the blood-pressure with diminished amplitude of the heart beats. The pressure-lowering action is more or less prolonged, according to circumstances. It is more pronounced in man than in certain of the lower animals; thus, in the rabbit, after intravenous injection of the extract of hypophysis deprived of its lipoid content by chloroform and then purified, there is

shown a short stage of lowered pressure followed by a reactive period in which the mean arterial pressure rises slightly and the cardiac amplitude is enhanced. In man injection of these same glandular products leads to a very pronounced stage of lowered pressure followed by a reactive stage at times of trifling extent or even entirely absent. Thus, in one of the author's cases the systolic pressure, upon intravenous injection of the products referred to, dropped in five minutes from 210 mm. Hg [Pachon instrument probably] to 120 mm., rising again in five minutes more to 180 mm., while in another case, in which the products were given intramuscularly, similar, though somewhat less pronounced and much more protracted, effects were noted.

The distinctly hypotensor substances obtained from the pituitary in the attempt to isolate the active principles possess a few of the known actions of whole extracts of the organ. Thus, the action of stimulating intestinal motor activity appears to be preserved, judging from the frequency of bowel movements in the hour succeeding the injection. The action on the uterus and adnexa also appeared rather distinct clinically. The delipoidized and purified extract also produces glycosuria. On the other hand, the vasoconstrictor effect of this extract appears less marked; the pallor exhibited by patients immediately after injections of pituitary extract may be due simply to lowered pressure and the selective action of the product on the left ventricle. Similarly, the diuretic action emphasized by Schäfer seemed less pronounced than after the administration of whole pituitary extracts. It is still difficult to state whether the same hypotensor substances are possessed of all the properties above referred to, or whether they are present in admixture with still other active substances.

On the whole, it seems clear that different pituitary preparations should be used with discrimination, according to indications. The substances studied by Houssay and by Claude, Baudoin, and Porak exhibit differences, in their effects on blood-pressure, from whole extracts of the posterior lobe of the hypophysis, while preserving most of the other properties of pituitary products. These differences are of import where certain definite therapeutic effects are sought or where the results of a rise in blood-pressure, as in hemoptysis among the tuberculous and in visceral hemorrhages (which have appeared favorably influenced by pituitary injections), are regarded with apprehension.

Abstracts from Current Literature on the Internal Secretions

Effect of Removal of the Adrenals on the Stomach.—The author describes a series of experiments on rabbits and dogs and also 5 autopsies on human subjects. In the animals after complete or partial abolition of adrenal functioning there were marked changes in the mucous mem-

brane of the stomach consisting in circulatory disturbances, edema, hemorrhage, and necrotic processes, the severest of which only exceptionally showed even slight tendency to heal. The author's reasons for assuming that the stomach lesions were caused by the adrenal disturbances were that they were less severe and recovered more readily when only one adrenal was removed; that they were not found in a rabbit which in spite of removal of the adrenals showed no signs of decreased adrenal function; that they were not found when the operation consisted simply in removing the adrenal capsule, and that they were lacking when the rabbits, after removal of the adrenals, were given epinephrin or adrenals were transplanted from other rabbits. In 5 cases of gastric or duodenal ulcer in human beings microscopic examination showed marked changes in the adrenals,—thickening of the capsule, nodular hypertrophy, fatty degeneration, great congestion, and multiple hemorrhages. (Journal of the American Medical Association, from Virchow's Archiv, Bd. ccxiv, Nu. 3, 1913.)

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Uric Acid Excretion in Hypophyseal Disease.—The authors' patients were placed on a purin-free diet, and the uric acid of the urine determined by the method of Hopkins-Folin-Shaffer. In 3 cases of acromegaly the endogenous uric acid was found to be twice the normal average or greater. In 1 patient an endonasal resection of part of the hypophysis was effected; no clinical improvement was noted shortly after the operation, nor was there any decrease of the uric acid output. In this patient there was a prompt increase in uric acid following the administration of 20 Gm. of sodium nucleinate. In 2 cases of dystrophia adiposogenitalis associated with hypophyseal tumor (one hypophysis cystic at autopsy, the other a "tumor in the hypophysis region"), it was found, on the other hand, that the endogenous uric acid was normal or subnormal, with only a slight response to the administration of sodium nucleinate. Assuming that acromegalics are suffering from increased functional activity of the hypophysis, it is suggested that the determination of endogenous uric acid may be of some diagnostic value. W. Falta and J. Nowaczynski (Berliner klinische Wochenschrift, vol. xl, p. 1781, 1912; American Journal of the Medical Sciences, July, 1913).

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Adrenal Hypernephroma and Sex Characters.—Abnormal sex characters do not always occur when there is adrenal hypernephroma. Our present knowledge concerning their relationship to those tumors may be summarized as follows: 1. In children they are almost invariably present in the form of hirsuties and often other abnormalities (17 cases of hypernephroma collected; in 16—13 females and 3 males—sex abnormalities were present). 2. In adult females before the menopause they are frequently present (12 cases collected; sex abnormalities present in 7, while in 2 others menstrual disturbances occurred before death). 3. In females after the menopause they are not recorded, though a growth

of hair on the face or change in the voice, etc., might be thought worthy of note (8 cases collected). 4. In adult males they are probably absent. In this connection it is of great interest that adrenal cortical rests or bilateral hyperplasia of the adrenal cortex was noted in 15 per cent. of female pseudohermaphrodites, but in only 0.7 per cent. of male pseudohermaphrodites.

There is no evidence that hypernephroma in the kidney, which shows a totally different histologic structure from that in the adrenal, is ever associated with abnormal sex characters. Glynn and Hewetson (Journal of Pathology and Bacteriology, July, 1913).

* * *

Cerebral Form of Subacute Hypoadrenia Following Typhoid Fever.—The writer records the case of a soldier of 22 who was in the hospital for two months with typhoid and returned two months after discharge. He was then profoundly asthenic, pale, and wasted, answered questions reluctantly, and complained of lumboabdominal pains. There was persistent severe cephalalgia, with intellectual clouding, refusal of food, nocturnal delirium, inequality of the pupils, great tearfulness, hopelessness, mental inertia and indifference, sciatic pains, digestive troubles, and vomiting. The extremities were cold to the touch and slightly bluish. The patient complained that he could not warm himself in bed. Hypothermia and a very feeble low-tension pulse were present, but not the white-line phenomenon. He improved progressively under adrenal medication. At first he was given 30 drops daily of 1 : 1000 adrenalin solution, increased to 40 drops after a few days' time, with periodic cessation of this treatment. He recovered in about three months, and returned to military service. The commonest forms of adrenal encephalopathy appear to be the psychopathic and the depressed melancholic. R. Donius (Archives de médecine et de pharmacie militaires, June, 1913; Medical Chronicle, August, 1913).

* * *

Action of Extracts of the Medulla and Cortex of the Adrenals on the Mammalian Heart.—The active substance contained in the adrenal medulla strengthens, in small doses, the contractions of the heart. In larger amounts it accelerates the heart rate and increases the tone of the myocardium. The slowing in the heart rate noted upon administration of the extract in the living animal is due to a simultaneous stimulation of the cardioinhibitory mechanism, the result, in turn, of the vasoconstriction caused by the adrenal preparation. The acceleration caused by epinephrin in the *isolated* mammalian heart is due chiefly to a direct excitation of the myocardium and to a state of paralysis or lessened excitability of the cardioinhibitory apparatus. The change in the strength of the heart beats and in the tonicity of the heart muscle is also due to a direct action of the adrenal principle on the cardiac fibers.

In the extract from the cortic portion of the adrenals there exists, besides the substance considered active, another principle, having an

opposite effect, *i.e.*, tending to slow and weaken the heart beats. A. Austoni (Archives italiennes de biologie, vol. lvi; Nouveaux remèdes, April 24, 1914).

* * *

Thyroid Therapy.—A disadvantage in the use of ordinary thyroid preparations in hypothyrotic conditions is that the sheep thyroids employed contain much less arsenic than human thyroid. A useful effect is obtained by combining with the sheep thyroids arsenic, especially in the form of sodium cacodylate. The further addition of epinephrin is appropriate in order to secure a stimulant action on the heart. Thus, the author advises the following mode of medication: Dried thyroid substance, 0.05 Gm. (⅘ grain); epinephrin, 0.001 Gm. ($\frac{1}{65}$ grain), and sodium cacodylate, 0.0005 Gm. ($\frac{1}{130}$ grain). Continued treatment with this combination frequently brings about decided improvement in cases with an intermediate grade of hypothyroidism, as manifested by such signs as a rough, dry skin, poor nutritive state of the hair and nails, bleeding from the gums, headache, lassitude, lowered temperature, and loss of hair. Pyorrhea alveolaris is to be considered associated with poor thyroid functioning. Ten out of 14 cases of this affection were favorably influenced by thyroidin-sodium cacodylate treatment. Heinrich Stern (Berliner klinische Wochenschrift; Zentralblatt für experimentellen Medizin, July 10, 1913).

* * *

Abderhalden's Hematologic Studies and the Internal Secretions.—The author discusses the relationship between Abderhalden's diagnostic reactions for pregnancy and tumors, on the one hand, and the pathology of the internal secretions, on the other. Naturally the alien albumin from the placenta and tumors may have something in common with the disordered secretions of ductless glands. These substances may not, like those first mentioned, be split up by enzymes in the blood. Rather, they themselves represent cleavage products of a more or less alien and toxic character. Fauser has recently sought to show that such products are able to produce psychoses, notably thyropsychoses, dementia precox, and luetic psychoses. In dementia precox cleavage products from the genital glands are accused. In metaluetic psychosis some unknown component of this sort may be discovered in time. The parathyroid is suspected in connection with convulsive affections as well as the myasthenic states. It is time that these patients were treated with pluriglandular extracts. Münzer (Berliner klinische Wochenschrift, April 28, 1913).

* * *

Medical Aspects of Exophthalmic Goiter.—The author has treated medically over 90 cases, about 40 being still under treatment. Most of these he expects to progress gradually to recovery, as the others have done. Operative assistance will probably be required in less than 10 per cent. of the whole number treated. He employs the following remedies: Quinine neutral hydrobromide (preferred to other quinine salts because it is better tolerated); the salicylates, aspirin, and drugs

of this class (also neutralizing thyroid secretion); bromides or cannabis indica, to control excessive nervousness and the physiologic action of quinine, and trional, veronal, etc., in some instances, for insomnia. Purgatives are useful in removing indican. The author recommends a combination of podophyllin, cascara sagrada, and oil of black pepper; also sodium sulphate, given with potassium bitartrate. Proteins are added to or taken from the diet, as may be indicated both by the urine and the patient's weight. The Bulgarian lactic acid bacteria are always of great value. H. P. Jones (New Orleans Medical and Surgical Journal, November, 1913).

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Uterine Rupture from Pituglandol.—The patient, 34 years old, had had 7 spontaneous, full-term deliveries. Pains began at 11 P.M.; membranes ruptured at 1 A.M.; later, the heart sounds became inaudible and the discharge of meconium caused the midwife to send for a physician. As none could be procured, the patient was sent to a hospital. At 5.30 A.M. one dose of pituglandol, 1.1 c.c., was given subcutaneously to increase the pains. The cervix was widely dilated. Since after one and a half hours this had not increased the pains, another dose was given; five minutes later the patient became restless and excited, as now very severe, quick pains ensued. The patient cried out suddenly; the pulse became feeble, and cold perspiration appeared on the forehead. Rupture of the uterus was diagnosticated and laparotomy resorted to at once. The cervix was torn through on both sides, up into the parametrium. The uterus was removed. The child could not be resuscitated, and the mother died of general peritonitis on the third day. G. Espent (Münchener medizinische Wochenschrift, August 12, 1913).

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Asthenia from Functional Insufficiency of the Adrenals.—Case of a woman of 32 who had never been quite healthy since a severe diphtheria at 14. She tired easily and experienced palpitations, dizziness, and sudden sweating on slight exertion. At 28 she passed through a normal pregnancy. Called to see her as she was said to have fainted, the author found the skin pale and clammy, the pulse scarcely perceptible; the heart rate 52, but rhythmic; the heart sounds pure, and the temperature in the mouth 35.8° C. The patient felt that she was dying. The author injected 0.5 c.c. of 1:1000 epinephrin solution, assuming that the trouble was an acute vascular paralysis. In fifteen minutes the symptoms had subsided, and the patient felt well and strong; pulse 62, and much stronger. The patient was given a course of carbonated baths and seems permanently improved; the myasthenia is much better, the pulse 72, and the blood-pressure 110. Hoke (Wiener klinische Wochenschrift, October 2, 1913).

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Epinephrin and Abortion.—Recent reports in the literature of benefit from epinephrin in osteomalacia, in uncontrollable vomiting, and in

other disturbances in pregnant women led the author to give the drug in such cases, as all the writers emphasized the harmlessness of this treatment in the dosage advised. Two recent experiences, however, tend to contradict this assumption of harmlessness: Two women in the second month of pregnancy were given a mild course of epinephrin and calcium salts because of an incipient apical process and defective nutrition. Each aborted in less than a month. The author has given this treatment to other women in later months of pregnancy and never before witnessed any tendency to abortion. One of the present patients had taken it without disturbance during the last three months of a preceding pregnancy. Silvestri (Gazzetta degli Ospedali e delle Cliniche, October 28, 1913).

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Observations on Goiter in Fish.—Prevalence of goiter in fish had been brought to the author's attention by the officials of a hatchery. The fish, in this case brook trout, had become listless and lost their fighting qualities. It was found that the fish had been kept exclusively on a beef-liver diet, and the large majority of them showed marked goiter development. The diet, except for the younger fish, up to 9 months, was accordingly changed to butterfish. In the younger fish this seemed to a large extent to remove the tendency to goiter development, and in the case of the older fish the goiter already developed showed actual retrogression. The normal food of the brook trout consists of fish, protozoa, and metazoa. Sea fish was chosen as the food because it was a convenient means by which to give a small amount of iodine. The problem presented is a great one in fish culture and the means employed in this case will absolutely relieve it. David Marine (Experimental Medicine Section, Academy of Medicine of Cleveland; Cleveland Medical Journal, December, 1913).

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Thyroid Treatment in Periodic Hydrarthrosis.—Report of the case of a young laborer who had been suffering for some time from mild rheumatoid phenomena in the knee-joints and right elbow-joint. Later, attacks of marked, almost painless swelling of the knees, unaccompanied by fever, were experienced, coming on at intervals of four to six days. The patient was neurasthenic and impotent. The thyroid was found to be small. Treatment with potassium iodide, methyl salicylate, tincture of iodine, etc., had been given without effect. Administration of cachets of powdered thyroid substance, each containing 0.025 Gm. (⅔ grain), twice daily, was followed promptly by irregularity in the attacks of joint swelling, and then by marked diminution in the swelling at each attack and lengthening of the intervals between attacks. The improved state continued after the thyroid medication (taken on twenty-four successive days) was stopped. Paul Dalché (Bulletins et Mémoires de la Société médicale des Hôpitaux de Paris, November 6, 1913).

Rôle of the Corpus Luteum in the Induction of Mammary Secretion.—Experiments are reported as a result of which the authors conclude that, under normal conditions, the corpus luteum not only is the determining factor in the enlargement of the breasts during pregnancy, but, in addition, sensitizes the mammary cells to the action of another factor, which causes them to manifest their secretory function. This other factor must be in the nature of an internal secretion. Under certain experimental conditions, a uterine or parauterine mechanical stimulus is capable of exerting the same action as the specific hormone. The mammary gland only reacts, however, to this traumatic stimulation if it has been subjected to a sufficient degree of sensitization from the corpus luteum. P. Bouin and P. Ancel (Société de Biologie, Paris, February 14, 1914; Semaine médicale, February 25, 1914).

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Peripheral Action of Epinephrin, with Especial Reference to the Lungs.—The author was able to show conclusively that epinephrin produces a prompt dilatation of the bronchioles where these are contracted; this effect is wholly independent of the rise of blood-pressure. Injection of a small dose of pilocarpine into the spine of a dog with vaso-sympathetic nerves cut, produces a slight bronchoconstriction, which is soon followed by a moderate but usually prolonged dilatation; this latter change does not occur if the adrenals have been previously excised or clamped off, and may therefore be ascribed to stimulation of these glands or to an increased secretion of epinephrin. Nicotine causes, after brief initial constriction, a diatation, which appears to be due to an increased secretion of epinephrin caused by the nicotine. D. E. Jackson (Journal of Pharmacology and Experimental Therapeutics, March, 1913).

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Intestinal Disturbances in Exophthalmic Goiter.—The author points out that diarrhea in exophthalmic goiter, which is frequently rebellious to ordinary measures, yields to the use of large oil enemas. Such diarrhea thus appears to be due to stasis of fecal matter in the intestine. In an exophthalmic goiter patient aged 42, with associated coprostasis, marked improvement followed regulation of the bowels. The exophthalmos and palpitation diminished and the pulse rate, previously 120, dropped to from 92 to 112. Soon all the symptoms of the disease disappeared, the thyroid merely remaining slightly larger than normal. Some years later the patient was seen again, in good health. In three other cases Basedow symptoms similarly disappeared through treatment of intestinal stasis. Ebstein (Quinzaine thérapeutique, November 10, 1913).

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X-ray Treatment in Exophthalmic Goiter.—The writer reports treating 16 cases of exophthalmic goiter with the X-rays. All left improved, some apparently cured. He suggests that exophthalmic goiter, the symptoms of which are apparently due to excess of thyroid secretion, is itself due to sympathetic irritation, and that Addison's disease is

also due to this cause, pointing out certain features which, he thinks, are common to both these diseases—pigmentation, irritable heart, digestive disturbances, etc. Cases of diagnosed Addison's disease which recover are due to the improvement in the sympathetic system. Early treatment of all cases showing symptoms of exophthalmic goiter with the X-rays is recommended. P. C. Fenwick (Australasian Medical Journal, December 20, 1913).

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Search for Adrenal Antibodies in the Presence of Adrenal Insufficiency.—The authors sought, by the complement deviation method, to find out whether adrenal antibodies exist in the blood of subjects with adrenal insufficiency. The reaction, performed with an extract of ox adrenals as antigen, proved negative in the serum of 7 patients, and likewise in that of a rabbit in which serious lesions of the adrenals had been artificially produced a month previously. Thus the reaction of fixation cannot be used for the diagnosis of adrenal insufficiency. The authors recall the fact, shown in a previous report, that the complement deviation reaction, performed with adrenal antigen, is positive in syphilitics in whom the Wassermann reaction, performed with the customary antigen, is positive. Sézary and Borel (Tribune médicale, March, 1914).

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Operations on Cases of Hyperthyroidism Associated with Other Surgical Conditions.—In the last year the author operated on 2 cases, both of whom died. The first had a fibroid with mild hyperthyroidism. The other, an enormous fibroid with questionable colloid goiter. The first case died at the end of twenty-four hours with marked hyperthyroidism. The second died on the fourth day with the same symptoms. If hyperthyroidism is present and there is also an abdominal condition requiring surgery, a ligation of both superior thyroid arteries should be done at a preliminary operation, to cut down the blood supply to the gland and thus curtail in some degree its secretion and the toxemia which sometimes overwhelms those cases. E. C. Moore (California State Journal of Medicine, November, 1913).

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Tracheal Obstruction Due to the Thymus.—In the author's case the dyspnea caused by the enlarged thymus was relieved by intubation, but returned shortly after the removal of the tube. The patient, aged 3½ years, of a type associated with status lymphaticus, received 2 injections of antitoxic serums without any anaphylaxis or fatal result, and had only a slight erythema following the administration of the first dose. While asthmatic since birth, the child had never had convulsions. There was an area of dullness over the upper end of the sternum and the upper limit of the first intercostal space, extending downward to about the fourth intercostal space; the lateral diameter extended 3 cm. to the right of the median line and 2 cm. to the left. Lynah (Archives of Pediatrics, September, 1913).

Pituitary Extract in Delayed Labor.—Pituitrin employed to induce labor in women past the calculated time for delivery. In one case, after 2 injections of pituglandol, twelve days after the awaited time for delivery, the author succeeded in inducing labor pains which resulted in the birth of a large child five hours after the first injection. In another case 4 injections were necessary to terminate labor, six hours elapsing from the first injection. The first injection of 1 c.c. is usually without effect, but the second dose excites active labor pains. This procedure is to be recommended for women who are prone to carry their pregnancy beyond the normal limit, giving birth to large children, with correspondingly difficult labor. Lucius Stolper (Zentralblatt für Gynäkologie, February 1, 1913).

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Combined Bromide and Thyroid Treatment of Epilepsy.—The tendency to bromism may be combated by the administration of thyroid gland. The writer administers in a cachet 1½ grains (0.1 Gm.) of dried thyroid every morning for three weeks, suspending the administration from time to time for a fortnight. Two doses, each of 15 grains (1 Gm.), of potassium bromide are given daily at equal intervals from meals, say at 10 A.M. and 10 P.M., dissolved in half a wineglassful or less of water. The bromide is to be given regularly. A chlorine-free diet is enjoined, and, should acne appear, the pustules are to be treated with an application of chlorinated soda solution and sulphur ointment. Sicard (Journal de médecine de Paris; Charlotte Medical Journal, December, 1913).

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Reversible Action of Epinephrin and Kindred Drugs on the Bronchioles.—Using new plethysmographic methods for investigating changes in the bronchiolar airway under the influence of drugs, the author observed that the action of epinephrin, tyramine, epinine, and some other amines and alkaloids, on normal bronchioles, is constriction. This constriction is not parallel to, and usually outlasts, the accompanying vascular constriction. It is abolished by urethane. After preliminary bronchiolar constriction has been brought about by curare, ergotoxin, apocodeine, pilocarpine, muscarine, or physostigmine, the action of epinephrin, tyramine, etc., is reversed, bronchiolar dilatation taking place. F. L. Golla and W. L. Symes (Journal of Pharmacology and Experimental Therapeutics, September, 1913).

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Iodine Content of the Thyroid.—The author found iodine in the thyroids of the pigeon, alligator, and frog, in amounts corresponding with the diets of these animals. It is also present in the thyroids of the dogfish. Thus, further support is given to the theory that iodine is an invariable constituent of thyroid tissue. The amount of iodine present in the parathyroids of the dog is of a less order of magnitude than that in the corresponding thyroids, if, indeed, the actual quantity ob-

served be not wholly attributable to thyroid contamination. Such results indicate a differentiation of function between the thyroid and parathyroids. Cameron (Journal of Biological Chemistry, January, 1914).

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Internal Secretions and Muscular Activity.—The author determined the effect on the muscles of extracts of different ductless glands, using for his experiments on dogs a glycerin extract of the thyroid, parathyroid, adrenals, thymus, pancreas, pituitary body, and testicles, besides several commercial products. The results showed that in general the glands may be divided into two groups: Those which stimulate muscular activity—the thyroid, testicles, pituitary body, and adrenals—and those which depress muscular action—the parathyroids, pancreas, and thymus. Just what determines the action is uncertain. G. I. Markeloff (Roussky Vratch, September 14, 1913).

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The Hypophysis During Gestation.—During gestation the glandular portion of the hypophysis undergoes histologic changes, the most marked being an enlargement of the cellular columns, hypertrophy of the cells and nuclei, and diminution of the chromophilic cells with increase of the other cells. Colloidal substances were not found, possibly because the glands examined had been removed from young and healthy animals. The author believes colloidal substance is not found if the proper technique has been followed. The changes described seem to take place early in pregnancy and are apparently not progressive. Siguret (Thèse de Paris, 1912; Tribune médicale, September, 1913).

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Pituitary Extracts and the Stomach.—The author used an extract of the posterior lobe of the pituitary of the bullock prepared by boiling 1 part of the gland in 5 parts of water, precipitating the albumin with lead acetate, treating the excess of lead with sulphuric acid, and neutralizing. One c.c. in salt solution, injected subcutaneously, promoted the contractility and secretion of the stomach, while the tone and the rhythm were regulated. The results were both experimental and clinical. On the excised stomach a similar effect was produced. Houssay (Semana Medica, November 13, 1913; New York Medical Journal, January 3, 1914).

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Epinephrin Anaphylaxis.—The authors observed ten and twenty days after an injection of suprarenin the characteristic phenomena of anaphylaxis, followed by death, in dogs in which 1 mg. of suprarenin or a small, normally inactive dose of thionin was injected. The typical circulatory manifestations—rise in blood-pressure, followed by a fall—were mechanically recorded. I. Gautrelet and P. Briault (Société de Biologie, Paris, July 12, 1913; Nouveaux remèdes, March 24, 1914).

Department on General Medicine

Cyclopedia of Current General Literature

Arthritis Deformans, Etiology of.—The chief objection to the infection theory has been the lack of isolation of organisms from the tissues of joints in so many cases. It occurred to the author that it would be well to look for organisms in the lymph-glands draining the involved joints, and he reports the results he has obtained. Germs were isolated from glands in 35 out of 38 cases of the disease, its duration ranging from two to seventeen years. Streptococci were obtained in 14 cases; a peculiar streptococcus-like organism at first completely or partially anaërobic in 9 cases; *Bacillus Welchii* in 9 cases; staphylococci in 3; *B. mucosus* in 1 case, and the gonococcus in 1. In a number of glands several organisms were found at the same time. In no instance were the streptococci hemolytic for human blood. They resembled on isolation the usual *Streptococcus viridans* more than hemolytic streptococci. There is often a marked difference between the type of organisms found in foci of infection, such as the tonsils, and of those found in the glands (or joints). Positive results were obtained from glands measuring only 5 mm. The number of colonies ranged from 1 to 2000. The virulence was slight. When first isolated, the streptococci showed marked affinity for joints and muscles, sometimes causing lesions closely paralleling the condition in the patient from whom the strain was isolated. Sometimes the same organism was isolated from widely separated glands, from gland and muscle, or joint fluid or joint capsule. The size of the gland is apparently often proportional to the degree of joint disease. The patient is often sensitive to injection of autogenous vaccine in the glands, and marked improvement may follow such injection. These facts seem to leave little doubt as to the infectious cause of the disease, but the full significance of the *B. Welchii* in both glands and joints is not yet clear. E. C. Rosenow (Journal of the American Medical Association, April 11, 1914).

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Carcinoma of the Breast, Diagnosis of.—Two clinical diagnostic points in breast carcinoma to which, according to the author, not enough attention is given, and which he has not seen mentioned in American literature, are (*a*) changes in the areola and (*b*) elevation of the nipple. Very early in nearly all these cases the areola shows slight changes in contour, the border presenting slight irregularities. With the advancement of the process the irregularities become more marked and the size of the areola may diminish, even to the degree of almost total disappearance. The nipple in a large percentage of cases is drawn to a higher plane than the normal one, the degree, of course, depending upon the amount of contracture. This is seen at its maxi-

num in the scirrhous variety, and is more constant than many other signs of carcinoma.

Some authors mention "atrophy of the breast" in connection with breast carcinoma; "retraction of the breast" has also been mentioned. Both of these conditions occur and in reality bring about elevation of the nipple. But as a diagnostic sign neither of the former is so plainly perceptible as the actual elevation of the nipple. In the earliest stages of contracture it is difficult to make out atrophy or retractions; yet it is easy to recognize elevation of the nipple when compared with its fellow.

So-called "pig skin" is another evidence of the same phenomenon and might be classed as the minute, and elevation of the nipple as the gross, manifestation of contractures. In breast carcinoma contracture in any stage is probably the most important sign available. It is seen in most late cases and in many early ones. If none is present one may well question the diagnosis of carcinoma, although not definitely exclude it. H. J. Van den Berg (Journal of the Michigan State Medical Society, June, 1914).

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Chancroid, Fuchsin in.—Fuchsin in a 5 per cent. ointment with petrolatum has been found of benefit in the treatment of carbuncles, and this led the author to try it in soft chancres. Nine cases of undoubted soft chancre showed so much benefit that he is convinced there is no other drug which is so useful. Under ordinary treatment soft sores take about six weeks to heal up, while with fuchsin he has been able to heal them in less than two weeks. The average duration of treatment was eight days.

One case was complicated with a bubo in the left groin as large as a small orange. With fuchsin ointment the chancroid healed in six days, and the bubo, which had threatened to suppurate, at once subsided. The ointment of fuchsin (aniline red) is applied to the chancre, after first washing and then drying it. If the prepuce can be brought over the glans penis no other dressing is required, although it is to be noted that fuchsin stains the linen red. The author requires the patient to clean the parts and apply the ointment twice a day, simply because it is difficult to get poor people to learn the benefits of keeping them clean. Otherwise, in his opinion, a single application in twenty-four hours quite suffices. Preliminary application of caustics, such as nitric acid, to destroy the superficial bacteria and infected tissues is not at all necessary. The ointment, even when applied to the most foul ulcers, clears up everything, and within forty-eight hours granulations always spring up. The effect of fuchsin seems to correspond in some respects to that of scarlet red—viz., rapid epidermization; but besides this there is an antiseptic effect. Fuchsin ointment of greater strength than 5 per cent. may irritate the parts. It is of no benefit in hard chancres. C. H. Kantawala (Lancet, May 23, 1914).

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Eczema, Treatment of.—As a rule, two paramount indications are to be met, viz., a rigid non-stimulating diet, and rest. For the average individual, who has usually been eating too much, an exclusive diet of milk, boiled rice, and Vichy water for the first week should be ordered, with

several doses of a saline such as Carlsbad salts. At the end of a week cooked fruits and soft vegetables may be added, and in another week chicken, eggs, or fish in moderation. Most patients experience a definite sense of general betterment aside from the relief of their eczemas.

The indication for rest is double. If the eczema is at all active and acute, anything which causes a dilatation of the superficial capillaries is detrimental. If there is any degree of nerve exhaustion, the more nearly the rest is complete, the better the result.

Locally, for the frankly acute, moist eczemas the author finds nothing comparable to treatment with wet dressings. Damage attributed to water in eczema is due not to the water *per se*, but to the sudden change from wet to dry and *vice versâ*. If wet dressings are elected, they must be kept continuously wet until the indication is to change. Thus, in a typical case of moist infantile eczema involving chiefly the head and face, a compress of boric acid solution, or 1 per cent. resorcinol solution, or even normal salt solution will effect a transformation in from twenty-four to forty-eight hours. Two masks are made of several thicknesses of fine linen, one being carefully washed while the other is in use. With the compresses renewed every three hours, rapid improvement is noted. Within forty-eight hours the crusts have separated, the oozing surface has become dry, shining, and ready for epidermization. In fact, if the resorcinol solution has been used the process is already well under way. At this stage the compresses may be discontinued and a soothing ointment of boric acid and ichthyol (3 per cent. of each) substituted. In other cases less acute, and for infants in whom such exacting ministrations are not practical, frequent applications of a 3 per cent. aqueous solution of ichthyol followed by calamine lotion are excellent.

In subacute cases, either in children or adults, 2 per cent. salicylic acid in Lassar's paste is a combination which deserves its high repute. It should be the remedy of choice when one is in doubt. As the case gets further away from the acute and nearer to the chronic type, stimulating applications are in order, with keratolytic agents in appropriate strength. For such cases a combination of salicylic acid and a tar preparation, as oil of cade or oleum rusci, is indicated. If the condition is only slightly indolent, salicylic acid, 3 per cent., and tar, 5 per cent.; if more sluggish, salicylic acid, 5 per cent., and tar, 10 per cent., may be tried. In the very indolent cases sulphur, green soap, pyrogallol, and white precipitate are often of service.

In treating any eczematous surface a good rule is first to remove all crusts and débris. Preliminary applications of olive oil, or a starch poultice, will serve this purpose. E. D. Chipman (California State Journal of Medicine, May, 1914).

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Epiglottiditis, Acute Phlegmonous.—This is an infectious process involving the submucous structure of the epiglottis and contiguous tissues. In the 4 cases under the author's observation suppuration accompanied the condition. The disease is characterized by a sudden, sharp onset, with painful deglutition and a sense of

fullness or obstruction in this region. Dysphagia appears, and the voice is guttural. These symptoms may assume a serious aspect in a few hours. At times the attack is ushered in with a chill, followed by a rise of temperature. The epiglottis is found dusky red, three or four times its natural size, and obstructing the laryngeal orifice. In all the patients the edema extended to the aryepiglottic folds, in two instances causing difficulty in breathing. Theisen has recorded 4 fatal cases, and Semon 4 deaths in a series of 14.

The alarming symptoms appear suddenly, but may subside in a few hours under active treatment. When local measures fail to bring about the desired results the question of tracheotomy arises. Moure states that it is the method of choice, but 7 of Semon's patients operated upon by tracheotomy did not recover.

The author's 4 cases were primary manifestations, but this disease may appear secondary to infective conditions of the teeth, tonsils, pharynx, or tongue.

The ichthyol-glycerin treatment (half-hourly applications of a cold 25 per cent. ichthyol-glycerin mixture) proved very beneficial after the surgical intervention (incision) in the author's hands. Stock or autogenous vaccines should be considered in the treatment of these cases. Ice externally was used in the author's cases. M. D. Lederman (Laryngoscope, January, 1914).

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Hemolysis from Distilled Water Injection.—Report of experiments on dogs. Results: Rapid intravenous injection of distilled water, in amounts equal to from 2 to 3 per cent. of the body weight or more, will cause in the dog transient hemoglobinuria and albuminuria. Lengthening the duration of injection from five to forty-five minutes is without noticeable effect, though a much slower injection might give different results. Hemoglobin-stained urine usually appears in the bladder catheter in from twenty-five to thirty minutes after the beginning of the injection. The hemoglobinuria lasts from four to sixteen hours, depending on the severity of hemolysis. Much smaller amounts (as little as from 0.4 to 0.6 per cent.) are sufficient to cause a noticeable hemoglobinemia without hemoglobinuria. Hemoglobinemia appears within from two to four minutes after the beginning of the injection and may last twenty-four hours. In doses that just fail to cause hemoglobinuria, albumin and bile may appear in the urine the next day. No noticeable anemia is caused, but there is a temporary decrease in the minimal resistance of the red blood-cells. E. B. Krumbhaar (Journal of the American Medical Association, March 28, 1914).

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High Blood-pressure, Treatment of.—For patients with a pressure of 200 mm. Hg and upward who have been overworked mentally and physically, treatment should be commenced with a period of absolute rest. If there be a pulse of over 100 per minute, or signs of heart-failure, rest is imperative, and the recumbent position should be maintained until the pulse frequency has fallen to normal and the signs of cardiac weakness have disappeared. But many of the cases of high pressure occur in people who take too little exercise. Walking is one of the best forms of

exercise to be ordered. Cycling may be allowed if taken quietly. Golf may be allowed to nearly all patients, except those with advanced arteriosclerosis. The methods of Schott and Oertel, if used, should be carried out under the direction of physicians who have had special experience in this line. Massage the author has found extremely useful in patients unable to take sufficient exercise, but directions should be given that deep abdominal massage is not desirable, the massage being almost entirely confined to the chest and extremities.

Warm baths, followed by vigorous friction of the skin, are very beneficial. If the patient has been accustomed to Turkish baths, he may continue their use with advantage, but one should hesitate to allow a patient with high pressure to take his first Turkish bath.

In case of insomnia the wet pack at 70° F. often has a very soothing effect. It answered better than anything else in a patient the author saw, who had a pressure of 250 mm.

The electric light bath is very useful in many cases, stimulating the cutaneous vessels and causing sweating; the patients usually experience a sense of well-being afterward.

From the Nauheim treatment the author has seen the greatest benefit in suitable cases, but it is a two-edged sword, and is contraindicated in advanced arteriosclerosis, chronic nephritis, and intrathoracic aneurism. It should be carried out only under the observation of a physician with special experience.

A period of starvation benefits some patients, while in some cases it is difficult to induce the patients to take sufficient nourishment. Speaking generally, the most suitable diet for arteriosclerotics with high pressure is one mainly composed of vegetables, farinaceous articles, and milk, while substances rich in nitrogen, and especially butchers' meat, should be avoided. In some dyspeptic patients the author has advised ½ pint of soured milk to be taken three times daily, with great benefit. He limits the amount of salt taken as much as possible, and prohibits salted meat and fish.

The author favors distributing the daily amount of food over 4 meals of about equal value, viz.: breakfast, luncheon, tea, and dinner. The two best meals in the day should be breakfast and luncheon; tea should consist of some bread and butter or plain biscuits with weak tea, or, better, cocoa, or milk and water; dinner should be a light meal—a little fish and vegetables, with a milk pudding.

The condition of the gums and teeth needs careful attention, pyorrhea alveolaris being one of the causes of high tension.

Calomel and blue pill are useful not only as aperients, but also have a remarkable effect in lowering blood-pressure. A teaspoonful of Epsom or Glauber's salts may be taken in half a tumblerful of warm water before breakfast, or one of the mineral waters. A tablespoonful of pure paraffin taken at night acts pleasantly and efficiently.

Next to the aperients come the iodides. Some patients tolerate the sodium salt better than that of potassium. If neither seems to suit, iodoglidine may be tried. The author orders small doses—3 grains (0.2 Gm.)—to be taken three times daily for months or even years.

In patients with a syphilitic history the Wassermann reaction should be tried, and, if positive, mercury administered, preferably by inunction, followed by potassium iodide in full doses.

High blood-pressure is often met with at the menopause, and is frequently accompanied by obesity; in such cases small doses of thyroid extract, together with a combination of bromide and iodide of potassium, are most useful in diminishing weight, lowering tension, and relieving the patient of the flushes and fullness in the head.

If the iodides are badly borne potassium or sodium nitrite in 1- to 2- grain (0.06 to 0.12 Gm.) doses may be tried, though doses up to 5 grains (0.3 Gm.) have been warmly advocated. In solution they are unstable, so are best ordered in chocolate tablets. In a few cases the author has found much benefit from the administration of the hippurates of ammonium and lithium. Of the latter, 3 to 4 grains (0.2 to 0.25 Gm.) may be given daily. The ammonium salt is less powerful, and 6 to 7 grains (0.4 to 0.45 Gm.) may be given daily. In rheumatic subjects sodium salicylate should be ordered.

The more powerful and quickly acting vasodilators, such as amyl nitrite, nitroglycerin, and erythrol tetranitrate, the author reserves chiefly for anginal or dyspneal attacks coming on in patients with high blood-pressure. In the very acute attacks inhalation of 3 minims of nitrite of amyl will often give immediate relief, and its action may be continued by giving $\frac{1}{100}$ grain (0.006 Gm.) of nitroglycerin. This dose may be increased up to $\frac{1}{10}$ grain (0.006 Gm.). A patient took 10 minims (0.6 c.c.) of the official 1 per cent. solution three times a day for some weeks. Eventually it failed to give relief. The author has found erythrol tetranitrate in doses of $\frac{1}{4}$ grain (0.016 Gm.) most useful in patients who get anginal symptoms on starting to walk. The drug should be given a quarter of an hour previously.

Bloodletting proved of the greatest service in certain cases of high blood-pressure. Venesection is indicated where the patient is unconscious and cerebral hemorrhage is feared; likewise in convulsive cases attended with high tension.

The author emphasizes the value of the sphygmomanometer in cases of coma as an indication in the employment of venesection; by this means one may be able to distinguish between coma due to hemorrhage and that caused by thrombosis, the blood-pressure being invariably low in the latter condition. F. de Havilland Hall (Clinical Journal, May 20, 1914).

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Malaria in Infancy.—In children in the first three months of life the first clinical manifestation of malaria is usually the finding of the child asleep with a high temperature. On waking him, he is exceedingly cross and irritable, jumping from the slightest noise, and is usually much nauseated. The temperature rises rapidly; the pulse, at first full and strong, becomes weak and thready; the skin is dry and hot; the respiration becomes rapid and shallow; the patient is constantly moving his hands and feet and rolling his head from side to side if old enough, and if the fever exceeds 103° F. there are usually convulsions, followed by coma. Unless the fever is

speedily reduced and the nervous system fortified, death results in a short time. Where the immediate danger of death is passed, the child is usually found much debilitated, and this condition lasts much longer in a young child than in an older one, the blood-producing organs not being as yet well developed.

The child's appetite is now variable; sometimes the stomach is still irritable and the child easily nauseated; the stools become frequent, watery, and offensive; emaciation is rapid, resulting, if untreated, in a speedy death.

In the diagnosis there is danger of mistaking the condition for indigestion or cholera infantum, but the attacks of indigestion usually come on while the child is asleep; usually previous symptoms have been noticed by the family, and the abdomen is usually much enlarged. In malaria the abdomen is usually normal in appearance and to the touch, while a microscopic examination of the blood will almost always reveal the plasmodium. If not, the apparent leucocytosis in a case of this kind is almost pathognomonic.

Sometimes the first manifestation of the attack is a convulsion, coming on without warning.

These patients respond much more promptly and satisfactorily to treatment, if this be instituted in time, than do older children. The treatment comprises: Cold baths to reduce the temperature, if practicable, and if not, hot ones. Small doses of heroin and atropine, or morphine (guardedly) and atropine to control the convulsions. A mixture of calomel and mercury with chalk, followed by plenty of castor oil, as hot as can be given. Quinine, administered by mouth in some syrup or as euquinine; by inunction in the form of the soluble salts dissolved in alcohol or glycerin, or, preferably, by hypodermic injections of the quinine and urea salt. An infant of this age bears well proportionately large doses of both the mercurials and quinine. After the acute symptoms have subsided, iron in such forms as to be easily assimilated, with essence of pepsin in appropriate doses, will cause a rapid recovery from the emaciated condition. B. H. Booth (Southern Medical Journal, May, 1914).

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Massage in Gynecology. — From twenty years' experience the author concludes that massage of the pelvic organs is of great benefit if properly applied in suitable cases. Most benefit is obtained in chronic patients with old salpingitis, with congested uteri and a painful, irritable condition of the levator ani muscles and of the pelvis generally, and in chronic metritis. Great gentleness is necessary. The inner finger must not use more force than if one were wiping condensed water vapor off a window pane, and the outer hand must not rub the skin, but gently move it in a circular manner over the abdominal muscles, beginning at a distance from the pelvis, and gradually working down from above the umbilicus. Such manipulations are of great benefit in many instances. Acute inflammation contraindicates them. Delassus (La Gynécologie, February, 1914).

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Middle Ear, Danger Signals in Suppuration of.—The danger signals indicating operative interference in acute suppuration are: (1) Temperature

over 101° F. (2) Non-subsidence of pain and tenderness and temperature after the performance of paracentesis or natural rupture of the tympanic membrane. (3) Facial paralysis. (4) Vomiting, giddiness, and tenderness. (5) Early optic neuritis.

The danger signals in chronic suppuration of the middle ear are: (1) Diminution of discharge with attacks of pain; (2) non-diminution of discharge after careful treatment; (3) fetor of discharge; (4) headache; (5) deep tenderness over the mastoid; (6) deep pain in the ear; (7) sudden increase in deafness; (8) diminution of bone-conduction; (9) vertigo and tinnitus; (10) early optic neuritis.

Occasionally in chronic suppuration one finds an early optic neuritis or slight vascular engorgement without necessarily severe intracranial disease being present. It is probably due to serous meningitis, and is an indication for immediate interference.

Such signs as high temperature, rigors, and severe vomiting, which are often given as indications for performing the mastoid operation, are not danger signals, because when they appear one has passed the signals and is actually in collision with a serious disease. When they have occurred serious measures have to be undertaken, such as opening the lateral sinus, and draining cerebral abscesses or the meninges. H. A. Kisch (Clinical Journal, May 20, 1914).

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Papillomata of Bladder, Treatment of, by High-frequency Currents.—The author applies the high-frequency treatment in the following cases: (1) In papillomata of clinically benign appearance, if they do not exceed the size of about a walnut, even if multiple; (2) in all recurrences of papillomata, either after endovesical treatment or cystotomy; (3) in cases of hemorrhage of malignant growths of the bladder that cannot be arrested by the usual means. There are not rare cases of bladder growths that look like papillomata, but are cancers clinically and histologically. It is possible, however, to make the diagnosis of benignity or malignity of a papilloma in many cases, at least with great probability. In making the differential diagnosis, one must not rely on a single symptom. Often the history of the case gives some clue. Juvenile age is in favor of benignity. Very serious hemorrhages are not uncommon in benign papilloma, but the intervals between them are long, whereas in malign cases bleeding is often traceable by the microscope. Pains are very rare in benign cases if cystitis is absent and the outflow of urine is not disturbed. The general state of health is not affected, and anemia, even after heavy hemorrhage, is rapidly improved. The course of the disease is very slow. Cystitis in benign papilloma can often be cured rapidly, whereas in cancers of the bladder this is usually impossible. The capacity of the bladder in case of benign papilloma without cystitis is normal; in case of malignant growth, often diminished.

Most important and decisive is the cystoscopic examination. The surface of the benign papilloma is fimbriated, with delicate and tender processes. Smooth surface is very suspicious of malignancy, although there are benign papillomata with smooth surface. Thin pedicle is in favor of benignity; papillomata with large and broad pedicles are very often, if not usually, malignant. Disturbance of nutrition in

the mucous lining surrounding the base of the growth, infiltration of the mucous membrane, bullous edema, and venous dilatation are nearly always a certain sign of malignancy. Symptoms of generalization, of course, prove the malignancy.

Histologic examination of parts of the growth, cast off or obtained by operation, is of value only if islands of epithelial cells are found, as malignant transformation may exist at the base. Franz Gehrels (Australasian Medical Gazette, April 4, 1914).

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Pellagra, Diagnosis of.—The diagnosis of pellagra is not infrequently somewhat difficult, the chief reason being its peculiarity as regards seasonal variations, the irregularity of its symptoms, and its long-drawn-out course for the development of the characteristic signs. The skin, nervous, and gastrointestinal symptoms do not usually develop at the same time, and dependence on the skin symptoms, which are the least important, is likely to lead to mistakes. One should learn to recognize others that will help its recognition between the attacks. Of these diarrhea stands first, occurring as a spring or summer attack, and in some cases persisting through the year. It should be regarded with suspicion in pellagrous areas. It may, however, be absent, and there are other gastroenteric symptoms that have a significance, since they commonly persist throughout the colder months and are often the first to appear. These are loss of appetite, "dyspepsia," pyrosis, and sore mouth. Nausea is present in most cases, and pain in the stomach and bowel is practically constant. Pyrosis is the most frequent, and the stomatitis occurring in the spring or summer is commonly present at some time or other. The tongue affords much information, even in the less active stages of the disease. It may at first present only the appearance of a normally coated tongue, but very often careful observation will show enlarged papillæ on the tip or anterior portion. An enlarged tongue is not uncommon. The characteristic feature of the pellagrous tongue, however, is the shedding of the epithelium, making it look cleaner, smoother, and very red. The redness varies in degree and sometimes one sees a pale tongue. Tremor of the tongue when extended is common, and is not confined to the attack. The fissured tongue is an aid to the diagnosis and is most marked in cases of long continuance, though it is not peculiar to pellagra. One should, however, be on the lookout for it and its association with enlargement; tremulousness and partial or complete epithelium denudation are enough to justify one in suspecting pellagra. T. Frazer (Journal of the American Medical Association, April 11, 1914).

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Polycythemia, Benzol in.—Report of the case of a patient suffering from polycythemia in which the symptoms were markedly ameliorated by the administration of benzol (benzene), the improvement holding for two months after the discontinuance of the drug. Ascending dosage was employed, the author beginning with 1 Gm. (15 minims) t. i. d. of an emulsion containing 25 per cent. of benzol, 25 per cent. of olive oil, and 50 per cent. of mucilage of acacia, and increasing until finally 4 Gm. (1 dram) of emulsion t. i. d. was reached. During the improvement of the blood-

picture the red cells fell from 9 or 10 million to 5 million, and the whites from 26,000 to 9500 during the year of treatment. The other symptoms, headaches, disturbance of vision, and itching, also disappeared. In connection with the results obtained by others, this observation justifies the opinion that benzol is a valuable therapeutic agent in polycythemia. The author's patient, however, cannot be considered as cured. J. S. McLester (Journal of the American Medical Association, May 2, 1914).

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Radium, Therapeutic Uses of.—The author presents a report dealing with cases treated at the Radium Institute, London, in 1913. *Epitheliomata of the buccal, lingual, and pharyngeal mucous membranes* still prove both refractory and disappointing in their response to radium, but a new method of treatment has recently been devised which in instances of cancer of the tongue has given distinctly encouraging results; it consists in the burying within the carcinomatous nodule of a very small, but intensely powerful radium emanation tube possessing an initial activity equivalent to that of 80 to 100 mg. of radium bromide enveloped in a screen of 1 mm. of silver or 0.3 mm. of platinum, and giving an exposure of twenty-four hours' duration. A fairly severe reaction follows, and in some cases the nodule ceases to grow and becomes replaced by dense fibroid tissue.

Several cases of *epithelioma of the esophagus* were under treatment, and where complete occlusion had not occurred and it was possible to introduce radium actually into the lumen of the growth distinct though temporary benefit resulted.

Carcinoma of the uterus yielded most gratifying results — disappearance of fungating growth, arrest of hemorrhage and discharge, healing of ulceration, and relief from pain. In favorable cases the treatment appears to exert a distinctly retarding influence on the dissemination of metastatic deposits and thus to arrest the progress of the disease. It is not possible, however, to speak of a cure.

Carcinoma of the Breast.—In many (inoperable) patients the primary growth becomes smaller, and infected glands and subcutaneous nodules lessen or perhaps even disappear. Little or no effect appears to be exerted in the prevention of metastatic deposits. Some cases with pleurisy dependent upon carcinomatous invasion of the pleura showed remarkable improvement. Small, isolated recurrent nodules, inoperable by reason of their attachment to the sternum, clavicle, ribs, or rib cartilages, are best treated by burying a small powerful emanation tube screened with 1 mm. of silver in them for a period of twenty-four hours.

Carcinoma of Thyroid.—Encouraging results were obtained in the few instances under notice. The treatment employed was to use numerous powerful applicators screened with 2 mm. of lead, and so disposed over the surface of the growth as to obtain the maximal "cross-fire" irradiation.

Carcinoma of Rectum.—This disease displays much variation in its response to radium. In general, the soft, annular and vascular type of growth is much more favorably affected than the flat, hard, non-annular plaque with much subjacent induration. Growths situated in the upper half of the rectum appear to be the more amenable.

Colostomy before radium treatment is often advisable.

The routine method consists of a thirty-hour exposure—five days of six hours each—with a tube containing 100 mg. of radium bromide, screened with 2 mm. of lead and 3 mm. of rubber, and applied in actual contact with the growth, the series of exposure being repeated at the end of six weeks. If the patient proves extremely susceptible smaller doses are given at shorter intervals.

Carcinoma of Prostate.—Benefit was noted in all cases. When catheterization can be well tolerated a 50 mg. tube of radium bromide in a "window" screen of 1 mm. of silver and 1 mm. of lead is introduced per urethram and maintained in actual contact with the growth for a period of two hours a day on five successive days, and its action is supplemented by another tube of 100 mg. in a screen of 2 mm. of lead, introduced into the rectum for six hours a day on five successive days. When catheterization is not practicable or advisable the action of the rectal tube is reinforced by a flat applicator screened with 2 mm. of lead and placed either on the perineum or over the pubes.

Carcinoma of Bladder.—Nine cases were treated and in 6 the results were most gratifying.

Sarcomata, if taken in their early stages and before dissemination has occurred, do very well under radium treatment. The burying within the growth of tubes of radium salts or radium emanation should be resorted to whenever practicable.

Fibroid Disease of the Uterus.—Radium exerts a most beneficial action upon the menorrhagia and metrorrhagia, though it seldom produces any very great diminution in the size of the uterus.

Leucoplakia. — Leucoplakic patches on the tongue, cheek, or vulva are speedily removed by radium, but tend to recur sooner or later. Half-strength plates screened with $\frac{1}{10}$ mm. of lead should be used, and exposures varying from one to three hours' duration given.

Flat Superficial Nevi, Capillary Nevi, "Port-wine Stains."—If blanching be readily effected by gentle pressure, the result of radium treatment will probably be satisfactory; only by great pressure is it unlikely that radium can do much.

Cavernous nevi do excellently under radium, especially when of such shape that "cross-fire" radiation is possible.

Warts and papillomata all yield readily to exposures of twenty minutes to one hour's duration with half-strength apparatus, unscreened.

Tuberculosis of Glands. — Where surgical measures have been declined for cosmetic reasons radium often proves of considerable value.

Spring Catarrh.—Radium will often cure the most intractable cases. It is essential to proceed with great caution, giving short unscreened exposures at intervals of a fortnight and carefully noting the reaction. If the dosage be accurately adjusted the granulations on the orbital conjunctiva gradually disappear.

Keloid gives excellent results when treated with radium, and a great improvement, if not complete cure, can be safely predicted.

Lupus erythematosus often responds favorably, even after all routine methods have failed.

Psoriasis and chronic eczema generally yield readily to short unscreened

exposures of from two to five minutes' duration, given on 3 successive days, the series of exposures being repeated at intervals of a fortnight.

Lichenification of the skin, with its intolerable itching, is quickly relieved and often completely cured by one exposure of ten or fifteen minutes' duration to a half-strength applicator screened with $\frac{1}{100}$ mm. of aluminum.

Pruritus.—Short unscreened exposures frequently yield a degree of relief unattainable by any other measures.

Exophthalmic Goiter.—The results obtained are sufficient to justify a trial of radium when other treatments have failed to produce any result. Prolonged exposures of thirty or more hours' duration in all should be given, with heavily screened apparatus containing 200 or 300 mg. of radium, the apparatus being so disposed as to cover as much as possible of the gland surface. Three or four weeks usually elapse before any effect is appreciable.

Arthritis Deformans.—The daily administration of 250 c.c. of radium emanation solution of a strength of not less than 1 millicurie per liter is sometimes attended by remarkable results. The cases which appear to derive most benefit are those in which the disease is of relatively short duration, and the changes are periarticular in type and multiarticular in distribution. A. E. Hayward Pinch (Lancet, May 23, 1914).

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Scarlatina in the Newborn.—Of 3603 cases of scarlet fever analyzed by Pospischill and Weiss there were only 28 cases during the first year, and these had their incidence during the later months of the year. The author had the opportunity of observing 9 cases of scarlet fever in infants less than 3 months of age and 1 case in an infant 9 months old. With the exception of the last all were the infants of mothers suffering from scarlet fever.

The clinical phenomena in all of these cases were somewhat as follows: From three to seven days following the onset of the disease in the mother the infant took sick with a moderate fever lasting from two to four days. There was the characteristic tongue with the reddening of the tonsils and of the soft palate. In no instance was there any membrane on or necrosis of the tonsils. There was at first some difficulty in nursing and a disinclination to take the breast. In 2 of the cases a fugitive scarlatiniform eruption was observed. In the remainder of the cases the occurrence of desquamation proved that the infant had had scarlet fever. Likewise the occasional occurrence of adenitis or otitis, and in one instance a transient albuminuria, clinched the diagnosis. The mild course of the disease and the mildness of the separate symptoms apparently justified the author in regarding these cases as instances of abortive scarlet fever. The mildness and rapid course of the disease may account for the fact that similar cases may have been largely overlooked in the past. In the breast-fed children the disease ran a much lighter course than in those that were bottle fed.

Conclusions: Infants during the first few months of life have no special immunity with respect to scarlet fever. Nevertheless, in the case of the newborn of mothers who have recently had an attack of scarlet fever, the disease runs a mild and abortive course. Puerperæ who have been exposed to scarlatina acquire the disease as readily as do others belonging to the same period

of life. Karl Levi (Beiträge zur Klinik der Infektionskrankheiten und zur Immunitätsforschung, Band 2, Numer 2; Medical Record, April, 1914).

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Shoulder, Habitual or Recurrent Dislocation of.—The author presents a new method of reaching the shoulder-joint for capsulorrhaphy. He now operates by a posterior axillary route. An incision 4 or 5 inches long is made posterior to the axillary vessels, with its center over the humeral head. The tendon of the latissimus dorsi is exposed, and above it is the subcapularis, which is not tendinous at this point. The capsule is approached through the interspace between these muscles, and the necessary suture can be readily done. Care must be taken to identify the circumflex nerve and its accompanying vessels. The advantages of this operation over the anterior one are: The wound is smaller; the large axillary vessels and nerves are not exposed, and the circumflex nerve and its vessels are more easily exposed, identified, and safeguarded; the anterior circumflex vessels are always divided in the anterior operation, never in the posterior; access to the capsule is much easier and more rapid; no muscles are divided; there is practically no hemorrhage, while in the anterior operation there was always considerable oozing; the time of operation is only about a third of that necessary for the anterior; return of normal function is much more rapidly and easily obtained; the elimination of buried material, as ligatures and sutures, and the small direct wound to the capsule in the independent position reduce the risk to a minimum. T. T. Thomas (Surgery, Gynecology, and Obstetrics, January, 1914).

Staining Spores.—The author has devised a stain which, he asserts, will stain spores consistently when used by unskilled workers. Four Gm. of acid fuchsin (Grubler) is dissolved in 50 c.c. of 2 per cent. watery solution of acetic acid. The two solutions are mixed and shaken and set aside for fifteen minutes; precipitation results and the mixture is filtered through a well-moistened filter paper. The reddish filtrate will keep for several weeks, but should be refiltered if precipitation occurs. In use, a rather thick smear is prepared as usual, and fixed by heat in agar culture is best. If broth is employed, a small amount of blood, or white of egg is used to fix the material to the slide. The film is covered by the dye and steamed vigorously for one minute, stain being added if needed, to prevent drying. When washed in water it appears a bright red. The slide is then dipped a few times in a dilute solution of sodium carbonate (7 or 8 drops of a saturated watery solution in a tumberful of water), and the moment the film turns blue taken out and rinsed in water. It is then ready to be dried and used. The spores will be found to stain a deep red and the bodies of the bacteria bright blue, according to the length of exposure to the alkali. Too long an exposure will cause the spores to stain blue. The method failed with *B. mycoides,* but this was resistant to all standard methods. F. M. Huntoon (Journal of the American Medical Association, May 2, 1914).

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Syphilis of the Nervous System, Intraspinous Injection of Salvarsanized Serum in.—There is no doubt that syphilis of the nervous system has increased in frequency in the early stages

of the disease, at least since the advent of salvarsan. The results obtained by ordinary combined mercury-salvarsan therapy in nervous manifestations occurring in the early stages of the disease have been very gratifying, but in the later manifestations have not been encouraging. That the spirochetes in tabes and paresis have not been found, as a rule, near the blood-vessels, but generally in the gray matter at some distance from them, and that salvarsan appears to have a greater predilection for most of the other body tissues than it has for nerve-tissue (Uhlman), may explain in part the inefficiency of salvarsan given intravenously in the treatment of these conditions. Salvarsan and other chemicals administered intravenously rarely, if ever, reach the ventricular fluid, whereas such substances injected into the subarachnoid space readily reach the ventricles, and, therefore, are thrown into the space which communicated directly with the perivascular and perineural spaces.

The following technique was devised by Swift and Ellis for this purpose: A dose of salvarsan or neosalvarsan is given intravenously in the usual manner. At the end of an hour 50 to 60 c.c. of the patient's blood are drawn by venous puncture; the clear serum is separated, diluted to 40 per cent. with normal saline, heated to 56° C. for one-half hour, and then injected at body temperature into the subarachnoid space by means of lumbar puncture, after withdrawal of 20 to 30 c.c. of spinal fluid. The number of treatments to be given depends largely on the individual case, but the general rule is to give, if possible, 8 to 10 treatments, 1 every second week, then discontinue the treatments for a time, repeating them if necessary, and using as an index 4 tests, viz., the Wassermann reaction with the blood, the Wassermann reaction with the spinal fluid, and the cell and protein estimation in the spinal fluid.

Besides the author, Swift and Ellis, Fordyce, Myerson, Cotton, and Esper have reported results from this method of treatment. About 60 cases have been treated and 500 treatments given. The author's experience consisted of 34 treatments administered to 4 patients. In each case there was pronounced improvement in the 4 serologic reactions and symptomatic improvement in 3. Swift and Ellis consider there is definite evidence that this form of treatment has a curative action on the syphilitic process, and that, therefore, its combination with intravenous treatment is indicated where especially intensive treatment is required, as in rapidly advancing tabes or paresis or where the disease has resisted other forms of treatment. W. H. Hough (Journal of the American Medical Association, January 17, 1914).

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Syphilis of the Nervous System, Laboratory Diagnosis of.—The author discusses the methods of examination in the order in which he proceeds in hospital cases. As a routine measure with a newly admitted patient, or on account of some suspicious neurologic sign, a blood Wassermann is first performed. This reaction as modified by Noguchi gives an appreciably higher percentage of positive tests in known positive cases of syphilis of the nervous system than the original reaction. Approximately 90 per cent. or over of general paretics and about the same proportion of cases of cerebral lues (meningitis, endarteritis, etc.)

gave positive blood reactions. (Some laboratories have obtained as high as 100 per cent. in a large series of cases.) The positive reaction, of course, may not mean syphilis of the nervous system, but a systemic syphilitic infection; it is, however, another symptom to add to the picture.

It is next important to perform a spinal puncture. This is attended with little danger, and with little discomfort if the small 19-gauge needles are used, the skin cocainized, and not over 5 c.c. of spinal fluid withdrawn under aseptic precautions. Three processes are to be undertaken with the fluid:—

1. The globulin content is to be examined. Noguchi has devised a simple means of doing this by adding 0.2 c.c. of spinal fluid to 0.5 c.c. of 10 per cent. butyric acid solution, boiling, adding 0.1 c.c. of normal NaOH (4 per cent.), and boiling again. A flocculent precipitate indicates an increase in globulin. Globulin is increased in all inflammatory reactions of the meninges, whether acute or chronic. It is always excessive in general paresis and cerebral lues. In reviewing his series of cases of cerebral syphilis and general paresis, the author found but 1 that gave a negative reaction.

2. The cells are next counted in the fresh, well-shaken spinal fluid by drawing an acetic acid-gentian violet mixture up to the mark 1 in an ordinary leucocyte-counting pipette, then drawing the spinal fluid to the mark 11, and agitating it. A drop of the mixture is placed upon a special Rosenthal counting chamber and the number of lymphocytes estimated in the same manner that a leucocyte count is made. This chamber is larger, however, so that a different formula is used in computing the result, viz., the number of cells contained in the entire ruled area, multiplied by 11 and divided by 32. This gives the number of cells per cubic millimeter. The following standard is used: Under 5 cells per cubic millimeter is considered negative; 5 to 9 cells per cubic millimeter is considered doubtful, and over 9 cells, positive. General paretics give a count of from 20 to 300 or over, although usually between 50 and 100. Cerebral syphilis likewise gives a high count, 1 such case having as high as 618 per cubic millimeter. It has been stated that any count over 80 points to cerebral lues rather than to general paresis, but this was not borne out by the author's cases coming to autopsy. The cell count will not differentiate between general paresis and cerebral syphilis. It may be said, however, that the count bears a definite relation to the intensity of the meningeal process. The acute meningitic infection of cerebral lues gives a most marked lymphocytosis, which ranged in the author's case from 56 to 618 mm. Gummatous conditions with some meningeal infection range from 40 to 100 per cubic millimeter, while in endarteritic forms with little meningeal infection the count may be as low as 3 to 5 cells per cubic millimeter. Practically the only other condition that may be considered is tuberculous meningitis, in which there is a lymphocyte count, but the symptoms are quite different and the tubercle bacilli can be recovered from the fluid by direct examination or upon guinea-pig inoculation. Epidemic meningitis is excluded on account of the radically different symptoms and the presence of pus cells and the etiologic organisms in the fluid.

3. The last step in the process is the Wassermann reaction with the spinal

fluid. This in general paresis cases gives almost 100 per cent. of positive results. In cerebral syphilis the percentage is probably only about 20 with the amounts usually used in the test, and by some it is always considered negative. H. P. Carpenter (Albany Medical Annals, May, 1914).

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Traumatic Exfoliative Keratitis.—This is a comparatively rare condition, met with chiefly in adult males, and characterized by severe neuralgic pains, lachrymation, photophobia, and a tendency to periodic relapses. As a rule, the causal injury is trifling. Six cases have come under the author's observation. The patients were thin, poorly nourished, and neurotic or arthritic in type. The symptoms are definite and clearly stated: One morning when the patient awakes, simultaneously with the opening of his eyes, he experiences a sharp stab. Touching or rubbing the eye or any subsequent attempt to separate the lids causes a repetition of the same pain. The eyeball is red and vision slightly defective; with or without treatment the attack lessens in severity, and the eye returns apparently to normal in a few days. In four to six weeks, however, a recurrence takes place without warning. The second and third attacks are never as severe as the first; subsequent ones may, however, be quite as bad as the second or third. Relapses take place with more or less regularity every four to six weeks. The only corneal defects are a sort of milky opacity during, and a minute depression or crack in the epithelium after, an attack. If the upper layer of the cornea is touched with a cotton-tipped probe it slides from Bowman's membrane.

The diagnosis must be made from several corneal diseases and dystrophies. Herpes febrilis corneæ occurs in febrile diseases, especially influenza, pneumonia, and measles, and is associated with an eruption of vesicles on the cornea. Herpes zoster corneæ shows an eruption of vesicles, but is distinguished by running a considerably severer course. Keratitis vesiculosa or bullosa occurs in blind diseased eyes.

The treatment usually recommended consists of bandaging the affected or both eyes, the introduction of neutral fatty substances, and the instillation of cocaine or other drops. The relief obtained from this is only temporary. More permanent relief is obtained by touching the eroded spot with silver nitrate, phenol, iodine, or formalin; but the results are not always certain. The same applies to the use of the curette before cauterizing, while in more than one case opacities have been noticed after this method of treatment.

In the author's case the conjunctival sac was rendered anesthetic and carefully douched with normal saline solution. By means of a Bowman discission needle several oblique punctures were made into the anterior chamber at and around the seat of the trauma; on each occasion before withdrawing the needle it was turned at right angles on itself to allow the antibody-containing aqueous to escape slowly. As a rule, the epithelium was raised from Bowman's membrane by the fluid. This, with the use of weak hydrogen dioxide lotion and 2 per cent. chloretone in parolene drops, proved sufficient to cure and prevent relapses. P. A. Harry (Lancet, June 13, 1914).

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Tuberculous Peritonitis, Surgical Interference in.—The author has operated in 31 cases, 27 in adults and 4

in children, by a technique modified from that of Samuel Lloyd. In nearly all cases the primary improvement was very marked. In some it was only temporary; in others a second operation was required to obtain the ultimate result. In but 4—all in an advanced stage of the disease, with the lungs or other organs also considerably involved —was there no improvement.

The operation consists in an incision 3 to 4 inches in length through the sheath of the right rectus. Upon examination of the viscera and parietal peritoneum, disclosing the diagnosis of tuberculous peritonitis, the patient is eviscerated so far as possible. The intestines, caught in a nest of hot, moist towels, are thoroughly washed with a solution of 50 per cent. commercial hydrogen dioxide. The abdominal cavity is then thoroughly flushed with the same solution, after which it is washed out with equal thoroughness with normal saline solution, as are also the intestines. These are then replaced in their proper position within the peritoneal cavity, which is closed with 3 layers of sutures. Primary union followed in every case operated.

As it is extremely important that these patients be got out of bed and about as soon as possible, primary union is an essential part of the procedure. Hydrogen dioxide seems to help in attaining this end. The author gets his patients out of bed in from eight to twelve days, thoroughly protected by a snug abdominal binder made from adhesive plaster. General treatment for the relief of the tuberculous condition is also instituted.

Hydrogen dioxide is also valuable as a means of diagnosticating tuberculous peritonitis in its earliest stages, before it is really perceptible by other means. When hydrogen dioxide is poured upon the peritoneum, it produces a frosted appearance somewhat similar to that of a window pane on a cold winter's day. After the flushing with normal salt solution, the peritoneum not the seat of tuberculous peritonitis will resume its normal pink color. Where, however, this condition exists, the smallest miliary tubercles will stand forth pearly white upon a pink background. Aspinwall Judd (New York Medical Journal, June 6, 1914).

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Tuberculous Peritonitis, Treatment of.—Injection of nitrogen is suggested in this condition by the author, who reports the case of a young man who developed tuberculous peritonitis with recurring ascites. There was no benefit from laparotomy twice repeated, Röntgen exposures, or inunctions. After tapping and withdrawing 2.5 liters of ascitic fluid, the author injected 500 c.c. of nitrogen into the peritoneal cavity by the ordinary artificial-pneumothorax technique. Nine days later 600 c.c. were injected without withdrawing the effusion present. A third and a fourth injection of 800 c.c. and 600 c.c. of nitrogen followed, all in the course of two months. The patient improved rapidly and the abdomen appeared free from ascites. Eight months after the beginning of the injections, the patient seemed to have been entirely cured. Brückner (Berliner klinische Wochenschrift, January 19, 1914).

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Typhoid Vaccine, New Method for Therapeutic Use of.—The use of small repeated doses of 3 or 5 million organisms in the treatment of typhoid is urged by the author. The results by this method are apparently just as

satisfactory as from larger doses. The culture used was ordinary prophylactic stock culture, diluted with freshly boiled water. That these small doses can produce general systemic results is shown by the author's experiment, made with a view to demonstrating that the presence of a local and slight systemic result would be of diagnostic value in cases of typhoid before the appearance of the Widal reaction. The author administered to himself and a hospital matron each 5 million killed organisms of the culture. The amount of the injection was 2½ minims. Marked local reactions appeared, five or six times the extent in area that would have been produced by similar injections of a sterile innocuous solution, and general constitutional symptoms set in within three or four hours and were severe enough to warn the author never to exceed this dosage with typhoid patients already sick and febrile, until its previous administration had proved harmless. He accounts for the occurrence of the positive local and general reactions on the score of old, long-healed, aborted, or unsuspected typhoid infections, general or local, in the same manner as similar positive tuberculin reactions are explained in apparently healthy non-tuberculous persons.

In each of the author's 10 typhoid cases the initial dose of from 3 to 5 million produced a local arm skin reaction. In one or two instances there was an immediate temperature rise of from 0.5° to 1° of a few hours' duration. Ordinarily no such rise appeared, and not a single patient felt any worse for the injection. Though the temperature remained unaltered as a general rule for the first few days following the initial injection, every patient showed a decided improvement in facial expression. All seemed brighter and less typhoidal. This change could be noticed within twenty-four hours. It appears that a positive phase following this dosage is not induced before the expiration of from seventy-two to ninety-six hours. At this point usually a decline in temperature occurs, at times assuming the wide morning remissions and high evening rise characteristic of the third week of the disease. If following any single injection a decline in temperature or a slow lysis is induced, succeeding injections are not repeated until the decline ceases. But the author has almost invariably had better results by repeating the initial dose on the third or fourth day, whether there are indications of decline or otherwise.

If the local reaction at this time be slight or absent, the third dose is doubled. If present and moderate, the next dose is not increased. I. S. Kahn (Journal of the Texas State Medical Society, February, 1914).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

1. Internally: Equal parts of precipitated sulphur and milk-sugar; patient to swallow several times a day as much as is held on tip of a penknife. 2. Externally: Paint at night with a mixture of 10 parts of sulphur, 25 parts of alcohol, and 5 parts of glycerin. 3. Regulate bowels. 4. Meat, eggs, cheese, and sugar to be avoided. 5. Later, a ten- to fourteen- day course of Röntgen-ray exposures, one-third or one-fourth erythem doses being applied at 6 or 8 sittings, to a total of one and a half erythem doses. 6. Four or five weeks after this course, application of mercury quartz lamp for twenty or twenty-five minutes. The skin is to be carefully protected for eight or ten days and then gone over with the comedo extractor, any red spots left being treated with sulphur. *Kromayer.* 357

Acne Keloid. TREATMENT. In early cases small, isolated nodules may be excised; they do not recur if the incision is free of the circumscribed sclerotic mass constituting the nodule. *Adamson.* 357

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Alopecia Areata. TREATMENT. (1) The B. P. unguentum hydrargyri iodidi rubri (diluted from 4 to 2 per cent.); (2) the unguentum hydrargyri oxidi rubri, with acetum cantharidis, ℥j to ℥j, and (3) equal parts of sodium chloride and petrolatum found seviceable in this condition. Pure phenol often gave good results. Causes of peripheral nervous irritation, such as carious teeth, errors of refraction, or aural defects, to be investigated. In severe cases pilocarpine nitrate, injected into the scalp every week or fortnight in doses of 1/10 to 1/6 grain, is sometimes beneficial. *Dore.* 358

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

In amenorrhea, relative or absolute, ovarian extract considered best remedy by author. *Bandler.* 91

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Angina Pectoris. TREATMENT. Concussion at level of seventh cervical vertebræ, together with hypodermic injection of 1/10 grain (0.006 Gm.) of pilocarpine, to increase vagus tone, gives relief more promptly than does morphine. *Jarvis.* 160

Ankylostomiasis. TREATMENT. Betanaphthol in 30-grain (2 Gm.) doses given the first thing every morning is likely to prove more effectual than eucalyptus or thymol. Starvation of patient during such treatment is unnecessary; in bad cases it may be harmful. *Keith.* 165

Appendicitis. DIAGNOSIS. Following sign found valuable in diagnosis of appendicitis in small children, who show no sign of localizing appendicular pain: Upon light pressure over both iliac fossæ, the child executes slight movements of the right leg. If the pressure be increased, the right leg becomes rigid and irregular movements of the left leg are executed. Often the face suddenly flushes when pressure is made with the finger over the appendix. *Veau.* 477

TREATMENT. The appendix should always be removed in cases of localized abscess, whether it is free in the abscess cavity or deeply buried by adhesions. Results are far better than where the appendix is allowed to remain, as the author found in a series of 501 cases; not 1 died of peritonitis. The Fowler position, saline proctoclysis, and drainage of the peritoneum with a large split rubber tube inserted to the bottom of the rectovesical pouch should be carried out. *Knott.* 541

Argyria. TREATMENT. Hexamethylenamine, 10 grains (0.6 Gm.), caused marked improvement in the patient's coloration in a case of argyria due to collargol. *Crispin.* 542

Arthritis, Chronic. TREATMENT. Injections of phenol-camphor used with benefit. Must be made only into joint, never into spongy bone. Formula: Phenol, 30; camphor, 10; alcohol, 30. Only 0.5 or 0.25 c.c. is injected at one point, except in streptococcic processes, where 2 c.c. are necessary. *Pohl.* 235

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchitis, Acute. TREATMENT. Inhalations of recently prepared tincture of iodine

from wide-mouthed bottles found to cure bronchial catarrhs in four days. Inspirations —from 4 to 8 or more at each sitting—to be more or less deep according to severity of case. Inhalations to be repeated 5 or 7 times a day. If much mucus, expectoration to be assisted by usual remedies. In children iodine tincture may be dropped on pieces of cotton to be laid on pillow (over oilcloth) while patient sleeping. *Torri.* Page 303

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing, exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* 55

Burns. TREATMENT. (1) Hypodermic injection of morphine and atropine. (2) Immerse burned area in, or cover with light cloth moistened with, cold water to which has been added 1 teaspoonful of sodium bicarbonate or chloride per quart; continue until morphine effect manifest. (3) Spray or mop burn and surrounding surface with hydrogen dioxide, mop with dry gauze, apply gauze strips dipped in 2 per cent. picric acid solution in dilute alcohol, and cover with thin layer of cotton and adhesive strips or bandage. Allow dressing to remain till soiled, then reapply. (4) About third day, open blisters and mop away contents. (5) Where sloughing: Remove dead tissue as it loosens, cleanse surface with dioxide, dry, mop with picric solution, put on strips of rubber tissue previously kept in 1:1000 mercury bichloride solution, and cover with picric acid compress and cotton. *Plain.* 299

In infected burns a dressing of mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), is effectual. *Macfarlan.* 554

Cancer. DIAGNOSIS. Marked diminution of the area of cardiac dullness in the recumbent posture, as determined by percussion, found in 87 per cent. of 111 cancerous cases and only 16 per cent. of 107 noncancerous cases. This sign may be present in cancerous cases that show no wasting. When the sign is present, diagnosis of carcinoma should be rejected only after careful consideration. In some cases the sign has appeared early enough to enable successful resection to be carried out. *Gordon.* 234

Cancer, Gastric. DIAGNOSIS. Positive or negative diagnosis made by serial röntgenography in 616 cases. Of 97 cases operated on, diagnosis found absolutely correct in 94. Gastric cancer at any stage, or indurated gastric ulcer, can be detected by this method as accurately as renal calculi or bone fractures. *Cole.* 301

Cellulitis. TREATMENT. Packing infected arm from fingers to shoulders in hot mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection promptly. *Freese.* 304

Colles's Fracture. TREATMENT. In reduction soon after the accident, without anesthesia, the most satisfactory method is a sudden, sharp jerk of the wrist administered by clasping one's fingers under the upper fragment, making pressure with the thumbs on the dorsum of the lower fragment, and abruptly pronating the hands. *Allen.* 419

Conjunctivitis. TREATMENT. Instillation of a 1 per cent. solution of ethyl hydrocupreine hydrochloride, allowed to remain one-half minute, recommended in pneumococcic conjunctivitis, dacryocystitis, and corneal ulceration. *Sattler.* 481

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Corneal Ulcer. TREATMENT. Bathing part with 1 per cent. ethyl hydrocupreine solution for one-half minute every hour, six hours first day and twelve on next, found rapidly effectual in a case of ulcus serpens with hypopyon from chronic dacryocystitis. Sac expressed and conjunctiva cleansed with boric acid before each treatment with ethyl hydrocupreine, which was dropped on the ulcer. Practically specific against pneumococcic infections. *Wiener.* 168

Vioform in 2 to 4 per cent. ointment with petrolatum base, or in 1 or 2 per cent. strength in sterile oil, found useful in ulcers and injuries of cornea and sclera. *Dutoit.* 495

Coryza, Acute. TREATMENT. 1. Pill of morphine, ⅛ grain (0.01 Gm.), and a small dose of nitroglycerin. 2. In two hours, 10

grains (0.6 Gm.) of acetylsalicylic acid. 3. Hot bath. 4. On following morning, magnesium sulphate. 5. Locally, an ointment containing menthol, methyl salicylate, and oil of wintergreen in a lanoline base, to be sniffed back in nostril frequently, and followed by chloretone inhalant. 6. If discharge, feverishness, and periodic headache persist after a few days, patient should inhale steam from boiling water to which menthol and alcohol have been added. *Wilson.*
Page 484

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solution. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delirium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* 110

Dengue. TREATMENT. Three out of 7 cases were rapidly improved by administration of 30 drops of a 1:1000 solution of epinephrin by the mouth. Epinephrin is likely to prove useful in shortening convalescence in this disease and in mitigating the grave cases. *Khoury.* 329

Diabetes Insipidus. TREATMENT. Case in which injections of pituitrin caused marked, though but temporary, inprovement. *Farini.* 277

Diabetes Mellitus. DIAGNOSIS. Frommer's test recommended for detection of small amounts of acetone. Treat about 10 c.c. of urine with 1 Gm. of sodium hydroxide in substance and without waiting for it to dissolve; add 10 or 12 drops of a 10 per cent. solution of salicylaldehyde in absolute alcohol. Heat to 70° C. In the presence of acetone, marked purple-red color develops at zone of contact with alkali. This test indicates presence of 0.000001 Gm. of acetone. Urine must be diluted so that its specific gravity is about 1.01. *Muhlberg.* 232

TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.,* of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often causing glycosuria to disappear. *Cornwall.* 110

Dry vegetable diet recommended for cases in a state of acidosis. Patient to take daily 10 ounces (300 Gm.) of dried legumins (peas, beans, lentils), 5 ounces (150 Gm.) of butter, 3 to 6 eggs, and 3 to 6 aleuronat or gluten rolls. Green legumins may also be given. Soy beans may be used. This diet to be followed at least 3 days at a time. The starch it contains is better utilized than that of other foods, glycosuria often being not higher than under a diet poor in carbohydrates. The diet also combats nitrogenous loss; somnolence and anorexia, where present, often disappear, and diaceturia diminishes. *Labbé.* 300

Diphtheria. TREATMENT. Iodine ointment used locally in 30 cases. With 2 cotton pledgets secretions and false membrane were first removed and the surface dried, and a third pledget, smeared with the ointment, was then rubbed on the affected surface and surrounding area. This was done every 3 hours, or in severe cases every 2 hours, until improvement occurred. Many cases cleared up within a few hours, becoming free of false membrane on the second or third day. *Thomas.* 364

Dysentery, Amebic. TREATMENT. Use of quinine advised as an adjuvant to ipecac in resistant cases of this affection. Successful results were thus obtained in cases that failed to react favorably to emetine. *Brooke.* 417

Dysentery, Bacillary. TREATMENT. In acute form: (1) Rest and warm covering; (2) only small amounts of food at a time; (3) calomel at the outset; (4) acid drinks; (5) enemata of saline or soda solution or of methylene blue. In chronic form: (1) Rest; (2) enemata of 1:500 or 1:1000 silver nitrate, 0.25 to 0.5 per cent. tannic acid, 1:500 or 1:1000 thymol, 1 to 2 per cent. resorcinol or creolin, or enemata of gum arabic mixed with bismuth subgallate or iodoform; (3) phenyl salicylate, tannigen, ichthyol, or calomel internally; (4) serum treatment, 10 c.c. in mild cases, 10 c.c. twice at six- to ten- hour interval in medium cases, and 40 to 60 c.c. in severe cases, not exceeding 20 c.c. at a time when serum used daily; (5) appendicostomy or cecostomy with irrigation in severe cases. *Bassler.* 111

Following treatment recommended: 1. Calomel, 5 grains (0.3 Gm.). 2. Barley water and boiled milk for a day or two. 3. Warm applications to abdomen. 4. Six hours after calomel, an injection into bowel of sodium salicylate, 13 Gm. (3¼ drams); water, 650 c.c. (1⅓ pints) at body temperature, with a small dose of Dover's powder. Injection to be repeated if necessary on alternate days. In children, about 90 Gm. (3 ounces) of the salicylate injection should be used. 5. In chronic dysentery, a 10 per cent. decoction of simaruba bark, 1 dram (4 Gm.) every three hours. *Lutsch.* 481

Dysmenorrhea. TREATMENT. Cocaine applied to tuberculum septi in nose and anterior portion of inferior turbinate on both sides, followed by application of trichloracetic acid over these spots, in 93 cases. Four applications made between periods. Cases with premenstrual headache, nausea, and colic at onset of flow—but without organic pelvic lesions—completely relieved. Of 81 cases sending subsequent reports, 48 had been cured and 14 improved. *Mayer.* 167

Atropine found very useful, except in cases with high blood-pressure, when pressure must be reduced and cause sought and removed. *Stolper.* Page 235

Following exercise recommended: The patient lies on her back with the knees flexed and one hand on adbomen, and is then directed to see how high she can raise the hand by lifting the adbominal wall, and then depress it by contracting the abdominal muscles. This is to be repeated 10 times, night and morning. Jerky movement is to be avoided. Pain was lessened in many cases and wholly removed in a large number by this method. *Mosher.* 481

Cases of dysmenorrhea due to functional ovarian deficiency are almost invariably relieved by corpus luteum extract—obtained from pregnant cows only—in 5-grain (0.3 Gm.) capsules taken three times a day. *Dannreuther.* 520

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* 11

In mild acute cases paint on lesions an aqueous solution of picric acid several times daily; in more severe cases apply wet dressings of the acid, held by facial mask. Prompt and gratifying results. In subacute and chronic types cure hastened by beginning treatment with two or three days' application of picric acid solution. *Wilcox.* 176

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Elephantiasis. TREATMENT. Case in which Kondoleon's operation was successfully performed, with continuous postoperative improvement. Deep fascia of the leg was dissected off the muscles from the inner and outer aspects of the part, and cut away in one piece. The same area of subcutaneous tissue was removed by splitting it off the skin, the latter being then stitched back in position. Thiosinamine and salvarsan were also used. *Royster.* 546

Epilepsy. TREATMENT. Four patients with severe essential epilepsy treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic. Considerable benefit. Dose of fluid injected, 3 to 5 c.c. biweekly or weekly. Improvement striking both as to severity and frequency of attacks. In some, petit mal took place of grand mal. Greatest improvement noticed especially if injected fluid was taken from other patients during recurrent attacks, no matter how slight the latter. *Gordon.* 235

Epistaxis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin brought early relief in 5 cases. *Citelli.* 279

Epithelioma. TREATMENT. Concentrated sunlight, focused on growth with ordinary magnifying glass, found effectual. Useful where X-rays and radium not available. Invariably successful in obstinate recurrent ulcerative patches on face or nose. Focus sunlight on sore for ten or fifteen minutes at a sitting. If scab present, concentrate rays till burning is felt, then lengthen focus to cover wider area. Induce burning again every few minutes. Treat every day or two till scab easily removed, then apply a little cocaine and after three or four minutes apply rays so as almost to cauterize base of ulcer. Alternate with milder applications for fifteen minutes. Under milder treatments thereafter, at longer intervals, cure usually complete in three to six weeks. *Seelye.* 166

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

In facial erysipelas: Have beside bed bowl of boric acid solution in which ice is placed. Keeping cloths frequently moistened with the solution continuously on face effectually relieves pain and burning. Where leg or arm involved: Wet dressings of boric acid or aluminum acetate. In migratory cases: Ichthyol may be applied or surfaces painted with picric acid solution. *Erdman.* 112

Pyramidon used in 20 cases with uniformly favorable results: Diaphoresis, antipyresis, sedation, fading of eruption, which ceases to spread, and improved general condition. Diuretic beverages also given. Locally, following ointment used: Phenolis, camphoræ pulveris, ana gr. xv (1 Gm.); adipis lanæ hydrosi, petrolati, ana ℥ss (15 Gm.). *Satre.* 167

Discomfort and pain more rapidly relieved by picric acid solution than other agents, and edema disappears promptly. *Wilcox.* 176

Two facial cases treated by local applications of hepatic lipoid, rapid recovery following. *Tilmant.* 416

Following solution recommended as a dressing for the affected area: Mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces). *Macfarlan.* 554

Erythema. TREATMENT. Epinephrin used in 3 cases of erythematous taches of the face ("red nose"). A 1:1000 solution was given internally in 5-minim (0.3 c.c.) doses in water 3 times daily half an hour before food, and the treatment continued during five to six months (with short intervals). The erythema almost entirely disappeared, and a

year and a half after treatment it had not reappeared. No bad effect on the heart or blood-pressure was observed. *Rothmann.* Page 348

Erythema Multiforme. TREATMENT. Use of a colon bacterin may be of value in this condition. *Hazen.* 542

Felon. TREATMENT. Mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection in an unusually short time. *Freese.* 304

Where there is as yet no pointing or definite formation of pus, a wet dressing of mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), will usually reduce the course of the affection and frequently abort it. *Macfarlan.* 554

Fracture of External Malleolus. TREATMENT. Case of oblique fracture of fibula, involving malleolus, in which, great pain continuing after splinting, the malleolus was exposed by rectangular incision and, after detachment of external lateral ligament, entirely removed. The foot was splinted at a right angle to the leg. Pain ceased, and on the twelfth day the patient could stand on the foot without discomfort. Similar treatment recommended for all detached external malleoli. *Bland-Sutton.* 360

Fracture of Femoral Neck. TREATMENT. In adults the author recommends the addition of a side pull to the Buck extension. The side pull is exerted on the upper end of the thigh by means of a weight and pulley, the latter being placed opposite the crest of the ilium. It can be attached to the wall, a standard, or the side of the bed, and should be so adjusted that the pull is upward and outward at an angle of 45 degrees. The amount of weight at the foot of the bed should be sufficient to overcome the shortening, and the side weight about one-third of the foot weight. A well-padded splint of surgeon's felt, or sole leather, should be applied to the inner and under sides of the thigh, coming well up to the perineum, and fastened to the thigh by adhesive plaster encircling the limb. A band made of several layers of gauze or cheesecloth is convenient for the side pull. It should be fastened to the splint by adhesive plaster. By shortening the lower arm of this gauze the limb can be rotated inward, thus avoiding eversion. *Moore.* 361

Fracture, Ununited. TREATMENT. Osmic acid, 0.02 Gm. in 1 per cent. solution, injected directly into focus in a case of ununited fracture of fibia and fibula, rebellious for six months. Injection repeated 3 times in two weeks. Patient discharged two weeks later. Stimulating action of the acid on periosteum and marrow confirmed in rabbit experiments. *Segrè.* 307

Fractures about the Elbow. TREATMENT. These cases should be started on an internal right angular splint. At the second or third dressing, while the fragments are still plastic and when the swelling has subsided, the wrist should be slung from the neck, obtaining the most acute flexion possible without too much pain. The flexion is increased at subsequent dressings for two or three weeks, when it is decreased again until all dressings are abandoned at the end of four or five weeks. *Allen.* 419

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ℥iiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

In furunculosis of the external auditory canal, cleanse canal of cerumen, discharge, polyps, etc., and insert a wick of cotton, or of gauze if there is a discharge. Ripe furuncles should first have been incised in their centers. The wick is to be kept saturated with alcohol, plain or with boric acid, and should be changed daily. If pain is severe, and no pus can be located, it is best to give a sedative and wait for pointing, rather than incise at random. *Lothrop.* 482

Wet dressing of mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), recommended in the early stages of a boil. *Macfarlan.* 554

Gall-stones. DIAGNOSIS. In nearly every case of symptoms referable to gall-stones there is some calcium encrusted on the cholesterin core of the stones. The latter can, therefore, be detected with the X-rays. A small diaphragm, 1½ inches in diameter, and a fairly soft tube with rapid exposure should be used. A subsequent bismuth examination usually shows evidences of gall-bladder disease. To distinguish gall-stones from renal calculi, plates should be taken on both anterior and posterior aspects. The anterior plate will show the shadows small and sharp; the posterior, large and blurred; the reverse holds in case of renal calculi. *George and Gerber.* 547

Gastric Atony, Acute. TREATMENT. Continuous lavage of stomach through nose recommended. Cocainize nose and work soft oiled tube with 8 to 11 mm. lumen down into stomach. Attach longer tube and carry to receptacle. Amounts up to 5 liters thus drain away. Keep outlet of tube at level of bed to prevent aspiration of mucous membrane. *Grosser.* Page 305

Gastroenteritis, Infantile. TREATMENT. *B. lactis bulgaricus* in tablet form administered in 55 cases, varying in severity from moderate degrees of infection—6 stools a day—to the most grave—20 or more. From 3 to 10 tablets a day were given to each infant, according to the gravity of the illness. Results: 43 gained in weight; 2 lost; 3 gained and later lost, and 7 showed no change. There were no deaths. The temperature came down to normal within one to three days, and in two or three days the stools became yellowish or brown, well formed, and free from curds, mucus, and blood. *Schwartz.* 364

General Paralysis. TREATMENT. Remissions may be prolonged by suitable doses of tuberculin ($\frac{1}{1000}$ to $\frac{1}{5000}$ mg. of tuberculin residue). *Jackson.* 236

Glaucoma. TREATMENT. In non-inflammatory glaucoma, when operation is consented to, Elliot's sclerocorneal trephining is by far the safest procedure and the most productive of results. In 29 cases thus treated there were no serious complications at operation in any case. Seven eyes with absolute glaucoma were preserved that formerly would have been removed. In 7 other eyes which were sightly a small degree of vision was gained by the operation. In the remaining 15 the eyes gained considerably in vision and usefulness. *Reber.* 362

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Colloidal silicon injections used with benefit in a case of simple goiter. Trial of this measure is advised in both simple and exophthalmic goiter before operation is resorted to. *Suard.* 345

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Report of cases improved by administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided among twenty days in each month. *Gaultier.* 90

Next to operative treatment, where indicated, repose is important. The patients should be gotten out of their ordinary environment. A trip to an altitude of about 3600 feet often acts favorably, starting first at 1500 feet. The patient should be well nourished, on a carbohydrate-fat mixed diet. Galvanic stimulation of the neck is often useful; the anode being on the sternum and the cathode behind the angle of the jaw, a current of 1 or 2 milliampères should be slowly turned on for one to three minutes and then slowly turned off. *Bauer.* 411

Strophanthus administered in exophthalmic goiter with good results. Quinine may be simultaneously used. *Bate.* 513

X-ray exposure of the ovaries carried out in 10 cases of exophthalmic goiter, with favorable results. A gain in body weight followed in 8 cases, the exophthalmos was diminished in 4 and removed in 1, tachycardia was sometimes considerably reduced, and in 9 very marked subjective improvement was noted. Diarrhea ceased in 3 cases after the first exposure. Although no complete cure was effected, the author was led to conclude that, in the usual cases of moderate severity, irradiation of the ovaries yields more certain and rapid effects than the measures customarily employed. *Mannaberg.* 529

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1) Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2)

grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* Page 48

Best results are obtained by the "sealing-up" method when the patient is seen within forty-eight hours after the beginning of the discharge. A 5 per cent. solution of argyrol, to the amount of 25 minims (1.6 c.c.), is sealed within the urethra for six hours on each of five consecutive days, with non-contractile collodion. The latter can best be removed with cotton soaked in acetone. During the six-hour period no liquids should be ingested. After the urethra has been emptied, however, the patient is required to drink a quart of water to flush out the parts. Next day he should prepare himself for the treatment by limitation of fluid ingesta. *Ballenger and Elder.* 557

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made. *Wolff.* 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomentation applied for five or ten minutes twice, and followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* 50

Hemoptysis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin nearly always brings relief in average cases. Where first injection fails, give a second, and later if necessary a third, the latter intramuscularly. *Citelli.* 279

Intravenous injections of 0.5 c.c. of pituitrin were followed almost at once by cessation of hemorrhage in 10 out of 12 cases. Where the hemorrhage recurred on succeeding days, the same prompt relief was obtained. *Rist.* 411

Hemorrhage, Cerebral. TREATMENT. Venesection used with good results and recommended in cases of apoplexy in full-blooded patients with blood-pressure of 200 mm. or more. Amount of blood let in author's cases, 12 to 48 ounces. Where vein at elbow not easily found in stout persons, there are usually varicose veins in legs which can be opened. *MacFarlane.* 121

Hemorrhage, Gastrointestinal. TREATMENT. Iodine tincture in small doses at short intervals found effective in checking hemorrhage and diarrhea in 6 cases of typhoid fever and in 4 of gastric ulcer. It also relieves abdominal tenderness in the latter condition. *Nottebaum.* 484

Hernia. TREATMENT. Inversion of hernia recommended in patients who take anesthetic poorly and maintain strong expiratory efforts, forcing viscera into sac under pressure. Primary union and cure of hernia in each of author's 7 cases thus dealt with. *Haynes.* 170

Herpes Labialis. TREATMENT. Picric acid solution causes rapid drying of lesion and tends to prevent extension. *Wilcox.* 176

Hodgkin's Disease. TREATMENT. Benzene, 5 minims (0.3 c.c.) three times daily at first, then increased to 10 minims (0.6 c.c.), caused marked regression of enlarged nodes, beginning two weeks after treatment begun, in a case previously treated unsuccessfully with X-rays. The 10-minim dose was continued for six weeks. *Lawson and Thomas.* 173

Hyperchlorhydria. TREATMENT. Cream diet considered useful. (See Ulcer, Gastric.) *Nichols.* 169

Following measures recommended: (1) Magnesium oxide, combined with sodium sulphate and belladonna in small amount. (2) All food to be well cooked and most carefully minced. (3) Patient to take 2 or 3 meals at two-hour intervals in forenoon, but nothing after lunch until 7 P.M., when only porridge to be taken. (4) Fluid intake to be generally diminished and restricted to hours when stomach not filled with food. (5) In severe cases, or where gastroptosis: Rest in bed for two or three weeks. (6) Hot compresses twice daily for two hours; cold compresses at night. (7) If hyperacidity arises on basis of a catarrh: Rinse empty stomach in morning with 1:1000 salicylic acid or 1:500 silver nitrate solution. (8) Bowels to be carefully regulated. *Schmidt.* 302

Hyperthyroidism. TREATMENT. Injection into enlarged thyroid of 1 to 4 per cent. solutions of quinine and urea hydrochloride caused marked improvement in 3 cases. *Watson.* 265

Ileus. TREATMENT. Continuous lavage of stomach through nose recommended in duodenojejunal occlusion, postoperative bowel paralysis, ileus from adhesions, spasmodic contraction from peritonitic reflexes, and vicious circle after gastroenterostomy. (See Gastric Atony, Acute.) *Grosser.* 305

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* Page 56

Infections, Local. TREATMENT. Following summary of serviceable measures present: *A.* Inflammations with slight serum exudation, but with redness, heat, swelling, pain, and loss of function: 1. Rest. 2. Elevation. 3. Hot, wet dressing.—*B.* Where much serum exudation, but slight tendency to necrosis: 1. Incision. 2. Place gauze in wound saturated with Chlumsky's solution. (Camphor, 60 parts; phenol, 30; alcohol, 10.) 3. Wet dressing; keep wet. 4. Remove gauze in twenty-four hours. 5. Insert rubber drain. 6. Apply wet dressing.—*C.* Where marked necrosis: 1. Incision. 2. Drainage. 3. Wet dressing. 4. After inflammation receded, Durante's solution. (Iodine, 1 part; potassium iodide, 10; guaiacol, 5; glycerin, to make 100.) 5. Dry dressing. *Hoag.* 307

Insanity. TREATMENT. Recovery in manic-depressive insanity may be hastened by stimulation of leucocytosis by injection of 1 c.c. of terebene subcutaneously in the flank. *Jackson.* 236

Insolation. TREATMENT. 1. Ice packs or iced baths, for a few minutes at a time only, and to be discontinued when rectal temperature has reached 104° F. 2. Saline solution. If used by rectum, formula should be: Sodium chloride, 30 Gm.; sodium carbonate (crystallized), 20 Gm.; water, 1000 c.c. Introduction should last one hour. If used intravenously: Sodium chloride, 14 Gm.; sodium carbonate, 10 Gm.; water, 1000 c.c. The salt solution should be made first and boiled, and the carbonate crystals then added. 3. Digitalis, only where the preceding fails to excite diuresis. 4. Later, for headache: Acetanilide, acetphenetidin, or salicylates, with due caution. 5. For sleeplessness: bromides, trional, etc. 6. In apyrexial heat exhaustion, ice packs or baths are uncalled for, but saline solution should be administered, and combined with friction, massage, warm packs, and sufficient internal stimulant medication. *Woolley.* 548

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intertrigo. TREATMENT. Paint picric acid solution on surfaces and separate them with thin layers of absorbent cotton. In the more severely infected cases wet dressings of picric acid. Prompt results. *Wilcox.* 176

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valuable for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Iodine Poisoning. TREATMENT. Calcium lactate internally found useful in 2 cases of iodine poisoning from a course of potassium iodide. *Von den Velden.* 418

Lumbago. TREATMENT. Salicyl compounds or a 10- or 20- grain (0.6 or 1.2 Gm.) dose of quinine at onset of condition useful. Rochelle salts, ½ to 1 dram (2 to 4 Gm.) every hour or two until urine alkaline and bowels freely moved, also valuable. "Walking the lumbago off" may succeed if free perspiration accompanies the exercise. Turkish bath in early stage safer and more effective. Later: Rest, dry cups locally, deep massage, faradic current, and, if salicylates fail, iodine, in vegetable protein combination. *Henry.* 175

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Gold and potassium cyanide injected intravenously in 12 cases. Single dose, 0.01 to 0.05 Gm. Results good. Course of 12 to 14 injections followed by interval of two to three weeks, after which another treatment given. Even in severe cases, therapeutic results better than with tuberculin and other measures. *Poór.* 236

Lymphosarcoma. TREATMENT. Case with growth beneath sternomastoid muscle, recurring after removal, in which injections of Coley's fluid, chiefly into the swelling itself, caused the latter to disappear, with no evidence of recurrence one year later. Initial dose was ½ minim (0.03 c.c.), gradually increased for three weeks, an injection being given daily, until 10 minims (0.6 c.c.) was reached. This was continued two more

weeks, and later another course of injections, on alternate days for a month, was given. *Spencer.* Page 549

Malaria. TREATMENT. In all cases the blood can be sterilized of plasmodia by giving 30 grains (2 Gm.) of quinine daily for three days, followed by 30 grains on the same day of the week on which the last of the three days fell, for a period of six weeks. The sulphate should be used; its solution should be effected in the stomach, either by exciting the flow of gastric juice or giving a little hydrochloric acid. Where life depends upon immediate introduction of quinine—in comatose or cerebral forms chiefly—a soluble salt, usually the hydrochloride, should be given intravenously, well diluted with salt solution, in doses of 10 grains (0.6 Gm.), which will kill as many plasmodia as any larger dose. The drug need not be injected oftener than every eight hours. The intravenous route should be used until the drug can be given by mouth. *Bass.* 550

Mammary Abscess. PROPHYLAXIS. Threatened mammary abscess underwent absorption in 2 or 3 cases soon after administration of pituitary extract. *White.* 283

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Nasal Catarrh, Chronic. TREATMENT. Lavage with a solution of powdered boric acid, sodium bicarbonate, and sodium chloride in equal parts (with a little menthol added), 1 teaspoonful to a pint of tepid water, recommended. A ball-syringe should be gently used in carrying out the measure. Where local dryness is marked, the following oily spray is useful: Menthol, gr. v (0.3 Gm.); camphor, gr. ij (0.12 Gm.); oil of eucalyptus, ♏iij (0.2 c.c.), and oil of sweet almonds, enough to make f℥j (30 c.c.). *Wilson.* 484

Nephritis. TREATMENT. Case of chronic interstitial nephritis, already in uremic convulsions, in which renal decapsulation was performed. A narrow strip of capsule, about ¾ inch wide, was left on each side of the renal pelvis to form a cradle; for the suspension of the kidney a strong ligature was passed twice through each tag, the ends being carried through the adjacent muscles. The patient made an uneventful recovery; one year later he had gained 34 pounds and the urine showed no casts, albumin, or cells. *Lynch.* 545

Neuralgia. TREATMENT. Carbon disulphide, applied locally for fifteen seconds, often promptly relieves neuralgias, headaches, and nearly all local pains. *Seelye.* 542

Night-sweats. TREATMENT. Better results are obtained in the night-sweats of tuberculosis with aromatic sulphuric acid than with either agaricin or atropine. *Adams.* 552

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation, in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Osteomalacia. TREATMENT. Case in which excellent results obtained from epinephrin, injected in doses of 8 minims (0.5 c.c.) of 1:1000 solution, daily, in 2 series of 9 injections each. Patient finally discharged cured. *V. Salis.* 278

Ozena. TREATMENT. Use of sugar recommended. For first week or two surgeon should carry out treatment himself, and precede sugar by removal of crusts from nose, softening them if necessary with hydrogen dioxide or sodium bicarbonate solution. Patient to use nasal syringe once daily. After crust removal, massage mucosa with cotton-tipped probe; then nostrils may be packed with ribbon gauze soaked in simple syrup, to be removed in twelve hours. Repeat this treatment on alternate days. After a fortnight patient can insufflate powdered sugar himself. *Harry.* 175

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Pericarditis, Adhesive. DIAGNOSIS. Retraction of the chest wall circumscribed along the left costal arch between the parasternal and anterior axillary lines, and with pulsation, is pathognomonic. To examine for retraction one should lay one hand on the lower part of the sternum and the other on the spine opposite; the patient then taking a deep breath, the chest is felt to grow narrower and a distinct systolic retraction perceived. Preference of edema for the upper part of the body, as well as the paradoxic engorgement of the neck veins during inspiration, are also characteristic. *Tornai.* 424

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Phlebitis, Chronic. TREATMENT. Local alternate hot and cold submersions and spray advised. Two tubs or pails are used, one containing cold water and the other water at 110° F. The affected limb is first submerged in the hot water for thirty seconds, then in the cold for fifteen seconds. This alternation is gone through 10 times, ending with the cold-water submersion. The part is then gently rubbed until the skin is dry and red, showing proper reaction. Gentle stroke massage in the direction of the venous flow is then to be carried out for ten minutes, the skin dusted with talcum powder, and an

elastic support applied. The spray method (spraying with sponges of hot and cold water or a nozzle-spray attachment), applied for the same length of time, is useful to treat the upper parts that cannot be submerged. *Foster.* Page 424

Placenta Previa. TREATMENT. In marginal variety, inject 30 minims (2 c.c.) of pituglandol and at once rupture membranes. In central variety, according to extent of dilatation, perform version or introduce metreurynter and give pituglandol. Metreurynter generally expelled spontaneously in one-half hour. Then perform version and give second dose of pituglandol. *Gall.* 280

Pleurisy. TREATMENT. Autoserotherapy recommended in all cases of serofibrinous pleurisy in which pyemic infection is absent. A positive cure may be expected in over 80 per cent. of cases. In large effusions causing severe dyspnea and pain one should aspirate 10 to 200 c.c. of fluid and, before withdrawing the needle entirely, reinject 2 to 3 c.c. under the skin. Immediate relief from symptoms and a more rapid absorption of the exudate will follow. The injections should be repeated every other day until decided improvement takes place. *Pfender.* 417

Use of calcium lactate internally in pleurisy is indicated only when the effusion constantly recurs after puncture. *Von den Velden.* 418

Injections of 1:1000 epinephrin hydrochloride solution made into the pleural cavity in 20 cases, with constantly very favorable results. The amount injected was at first 0.3 c.c. (5 minims), and on the four or five succeeding days 0.2 c.c. (3.3 minims), in saline. Temperature began to descend on the third day, and the effusion underwent rapid absorption. *Wedensky.* 534

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.*, daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Vaccine treatment advised. First give polyvalent stock vaccine of pneumococcus and streptococcus, of each, 30 million, as soon as possible. Make sputum smears and cultures, blood-cultures in early cases, lung puncture in late ones, and prepare autogenous vaccine. If no definite response in twenty-four to forty-eight hours, repeat or preferably give autogenous vaccine. If still no response in thirty-six or forty-eight hours, double the dose. If there is response, as shown by improved clinical symptoms and signs, increased well-being, etc., defer reinoculation three days, or until the first symptoms of retrogression in general condition or physical signs occur. Maintain the dosage or increase it every two or three days until the patient entirely well. Generally about three doses are necessary. Average mortality with vaccine treatment only 5 to 10 per cent. Convalescence shortened and danger of complications lessened. In severe cases also give 20 to 30 grains of sodium citrate every two or three hours. *Craig.* 238

Epinephrin, 8 minims (0.5 c.c.) of 1:1000 solution in 1 pint (500 c.c.) of saline solution subcutaneously, caused prompt improvement in a desperate case. *Lonhard.* 281

Camphor-injection treatment recommended. A 30 per cent. preparation of camphor in oil of sesame, sterilized in a boiling water bath, should be used. As soon after the initial chill as possible, 2½ fluidrams (10 c.c.) of the preparation per 100 pounds of body weight should be injected hypodermically every twelve hours except in bilateral pneumonia and in severe toxemia, when injections should be made every six to eight hours. The site of injection should be the outer thigh or abdomen. The injection should be made slowly and the oil gradually deposited below the subcutaneous fatty tissue and not into it. *Cruikshank.* 426

Poliomyelitis, Acute. DIAGNOSIS. Preparalytic symptom: A peculiar, twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to somewhat less than a minute. Usually affects part or whole of one or more limbs, face, or jaw, but sometimes whole body. Duration of spells short at first. Often accompanied by a cry similar to hydrocephalic, or by brief period of unconsciousness. *Colliver.* 177

Pruritus Vulvæ. TREATMENT. In 2 cases of this condition associated with the menopause the itching was with great promptness relieved by internal administration of an extract of the corpora lutea of pregnant cows. *Dannreuther.* 520

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Low nitrogen diet found to have very favorable influence upon psoriasis eruption, especially when extensive. Severe cases improve under such a diet almost to the point of disappearance of the eruption. *Schamberg, Kolmer, Ringer, and Raiziss.* 178

Application of picric acid solution brings immediate and constant relief from itching. *Wilcox.* 176

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* Page 53

Puerperal Sepsis. TREATMENT. Fixation abscess recommended in this and other severe infectious states, including pneumonia, appendicitis, typhoid fever, etc., whenever condition seems to be taking a turn for the worse. Inject 2 c.c. of pure oil of turpentine under gluteal skin. When abscess forms, evacuate through small incision (do not drain) and apply Bier cups twice daily. Excellent results in 18 cases. *De Lostalot.* 168

Abstention from curettage in cases of sapremia advised. Instead, one should dilate cervix, using first a dressing forceps, then a small dilator, and lastly a large dilator. After this, strips of gauze should be soaked in a 50 per cent. dilution of tincture of iodine. One strip is to be introduced into the uterus with a uterine sound, left about a minute, and then replaced by another. As a rule, from 5 to 8 strips are thus used. When a drain is required, the last strip is left in the uterus, to be removed later in about eight hours. *Welton.* 487

In the septicemic form, local disinfection of the genital canal is the first measure requisite. If temperature does not subside, or rises again, intrauterine douching with the following solution is advised: Tincture of iodine 2 fluidrams (8 c.c.); 95 per cent. alcohol, 8 fluidounces (240 c.c.), and sterile water, enough to make 2 quarts (liters). Once daily is sufficient. If a sharp rise in temperature follows, local disinfection should cease. An easily digested, largely liquid diet is indicated. Enteroclysis and serum treatment are at times useful. Continual septic symptoms plus an abdominal mass, palpable above the symphysis or Poupart's ligament, call for laparotomy. *Hirst.* 490

Pyloric Spasm. TREATMENT. Atropine in a certain proportion of cases brings relief. The author found that epinephrin hypodermically procures complete and lasting relief in most instances. In 2 cases the palpable pyloric tumor could be felt to melt away under its influence. Prolonged gastric lavage, using water at 105° F., also has a happy effect in relieving spasmodic stomach conditions. *Stockton.* 367

Pyorrhea Alveolaris. TREATMENT. Sensitized vaccine against streptococcus, staphylococcus, pneumococcus, and bacillus of Friedländer used in a number of cases. After 2 injections, mechanical and dental treatment added. After 4 or 5 injections, teeth clean and firm, and organisms gone. Three or four supplementary injections given. No recurrence in six months. *Bertrand and Valadier.* 304

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disappeared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* 55

Rachitis. TREATMENT. Pituitary extract given to 16 young children with rickets, and effects compared with controls. After a few weeks of pituitary, the children were able to stand and began to walk; fontanelles began to close and growth of teeth was considerably accelerated. Osseous tenderness gradually diminished, weight was gained, and musculature became firmer. *Weiss.* 218

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intramuscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* 91

Rheumatism, Acute. TREATMENT. Intravenous use of sodium salicylate resorted to in 12 cases, 130 injections in arm veins being given in all. A very fine, sharp needle should be used. The solution is made by dissolving 10 Gm. of C. P. crystalline sodium salicylate in 50 c.c. of distilled water freshly sterilized by boiling. Each cubic centimeter contains 3 grains (0.2 Gm.) of the salicylate. Usually the dose was 15 or 20 grains (1 or 1.25 Gm.) and injections were given at twelve- or eight- hour intervals over a period of three to six days. Occasionally, in robust men, 30 grains (2 Gm.) were given, and as much as 120 grains (8 Gm.) in the first twenty-four hours, without unpleasant effects. Relief of pain was prompter and more pronounced than from oral administration. The method is indicated in patients unable to retain the drug by mouth; those who show little or no response to the usual method; to start the treatment with a few intravenous injections where pain is intense, and in cases with threatening heart complications, or in severe rheumatic affections of the eye. *Conner.* 428

Ringworm. TREATMENT. Body ringworm more easily controlled by painting on picric acid solution than by usual antiseptic ointment. *Wilcox.* 176

Wash part with a strong solution of sodium bicarbonate, swab with a mixture of 1 part of ether to 2 parts of alcohol, dry, paint with a 2.5 per cent. tincture of iodine, and apply immediately an ethyl chloride spray until the skin gets china white. In twenty-four to forty-eight hours the patch of ringworm will have become quiescent. Next tiny spots should be looked for and similarly treated. In ringworm of the scalp 3 or 4 applications of iodine and spray are required,

but on the face or smooth surfaces 1 application suffices. *Foley.* Page 429

Scarlet Fever. TREATMENT. Iodine ointment used locally in 19 cases (see Diphtheria). These cases were unusually free from local complications. *Thomas.* 364

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Scorbutus. TREATMENT. Calcium lactate, 45 grains (3 Gm.) a day, found a valuable measure. *Von den Velden.* 418

Sinusitis, Frontal. TREATMENT. In a number of acute cases marked relief was noted—because of the free rhinorrhea set up—from the intranasal use of the following solution: Mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces). *Macfarlan.* 554

Skin-grafting. Following method of dressing skin-grafts just after their application described: Strips of gauze, 6 to 8 layers in thickness, are thoroughly impregnated and buttered with sterile 33⅓ per cent. bismuth paste (Beck's paste). These are laid over the grafts smoothly for 2 or more inches beyond the wound. No wrinkles or folds should remain. Over these is placed a layer of absorbent cotton, and the whole he'd firmly by a roller bandage. The first dressing should be done on the fifth day, great care being exercised in the removal of the primary dressing. A similar dressing is reapplied and subsequent dressings done every third or fourth day as required. At about the fifth dressing one can peel from each graft a thin film of dead cuticle, leaving a firm, pink, healthy graft in position. *Coerr.* 358

Spasmophilia in Children. TREATMENT. Combined treatment with phosphorized cod-liver oil and milk curds from which the whey had been removed by washing with water (thus removing all mineral salts) was employed in 12 cases. A cure was obtained in 9 cases within a week, twice at the end of the second, and once in the fourth week. There was loss of weight, but this was soon made up on return to full milk diet. *Bernheim-Karrer.* 368

Syphilis. DIAGNOSIS. Luetin test valuable as diagnostic measure in tertiary and latent stages of syphilis, indicating a state of hypersensitiveness to spirochetal proteins induced by a period of cessation of introduction of these proteins previous to the test. Provocative injection of salvarsan, followed by both Wassermann and luetin tests, suggested to ascertain whether treatment has been curative in a given case. *Foster.* 179

Diminution in the bone conduction of sound, with otherwise normal hearing, is one of the earliest signs of constitutional syphilis. A tuning fork is struck and placed on the patient's mastoid process. When he no longer hears it, it is placed upon the physician's mastoid. If it is still audible to him, the test is positive, provided the patient's hearing was otherwise acute. The sign is positive also in brain tumors, hydrocephalus, epilepsy, and tetany. *Beck.* 491

TREATMENT. Epinephrin, 15 to 20 drops of 1:1000 solution in a little water by mouth, advised ten to fifteen minutes before injection of neosalvarsan, to prevent "nitritoid" symptoms, arising in some patients from the latter, *e.g.*, facial congestion, tingling in throat, nausea, and vomiting. *Galliot.* 212

Tetanus. TREATMENT. Case of tetanus in which, after the original wound and scar has been excised and pure phenol applied, subcutaneous injection of phenol was started, 1 fluidounce of a 1 per cent. solution being given. The strength of the solution was raised to 3 per cent. The groins and right axilla were treated alternately. Chloroform was administered at each injection owing to the spasms produced by the needle-prick. The urine retained its normal color throughout. No antitetanic serum was given. Recovery followed. *Reynolds.* 556

Tonsillitis, Ulcerative. TREATMENT. After thoroughly washing surfaces and crypts, apply 10 per cent. silver nitrate solution over ulcerated surface and carry down into crypts as well. Then dust thymol iodide with powder blower over gland and throw it into diseased lacunæ. Where tonsils seat of recurring inflammation, but patient objects to removal, use electric cautery. Selecting 3 or 4 crypts at a time, apply 10 per cent. cocaine solution to interior of each with fine-pointed cotton applicator. When anesthesia sufficient, introduce curved electrode into each crypt and turn on sufficient current to produce a white heat before electrode removed. Patients thus treated are freed from further attacks. *Bishop.* 241

Tracheobronchial Glandular Enlargement. DIAGNOSIS. Percussion of thoracic vertebræ, especially those above level of inferior scapular angles, affords tonal changes of clinical value in this condition; these must always be correlated, however, with mural signs in the individual case. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect vertebral percussion sound less, and oftener produce dullness than hyperresonance. *Da Costa, Jr.* 180

Trigger-finger. TREATMENT. Paint the part with iodine, insert a fine bistoury in the flexure crease, and, pressing the point down to the tendon, draw it along for ½ inch. Relief is instantaneous and final. A small pad of boric gauze may be applied to make pressure for two days. The tendon is easily located by thumb pressure at the crease. *Abbe.* Page 492

Tuberculosis. TREATMENT. Garlic, 1 fluidram (4 c.c.) of the expressed juice or 2 drops of the essential oil three times a day, recommended in all forms of tuberculosis. Externally, poultices of crushed garlic bulbs, 1 part, with 3 parts of lard, or garlic ointment (50 per cent. of the juice in petrolatum) are to be applied.

Mercury biniodide, 1/30 grain three times a day internally, and unguentum hydrargyri externally, give the best results next to garlic. In cases of severe toxemia, where more active elimination is necessary, the following treatments give best results: (1) Normal saline, 220 c.c., at 106° F.; also of value in hemorrhagic cases, intravenously. (2) Guaiacol, 32 drops in 220 c.c. of sterile water, at 106° F., intravenously. (3) Mixture of sodium salicylate, guaiacol, and glycerin, of each, 32 grains or drops in 220 c.c. of sterile water, at 106° F., intravenously. (4) A 2 per cent. aqueous solution of pure phenol (Bacelli's treatment), 1- to 5- c.c. doses hypodermically or by Murphy's drip in 10-c.c. doses; the kidneys must be watched. Cases of continued septic temperature, not improving from the above, should be treated surgically. For making the soil unfavorable for the tubercle bacillus, phosphorus, 1/1000 grain t. i. d., and Fowler's solution, 1 drop t. i. d., give the best results. *McDuffie.* 431

Tuberculosis, Articular. TREATMENT. X-rays found useful in bone and joint tuberculosis. Aluminum or thick leather shield to be used. Treatment not to be employed in children less than 5 years old, and in older children epiphyses should preferably be avoided. Best effects noted in cases with sinuses and secondary infection. Part exposed from all sides to an erythema-producing dose; three weeks then allowed to elapse before repetition. Joints healing under the rays show but little limitation of motion. Abscesses with skin about to yield should not be rayed, owing to danger of necrosis. *V. Schede.* 165

Tuberculosis, Laryngeal. TREATMENT. Scarlet red, 10 per cent. in a mixture of equal parts of sesame oil and petrolatum, applied twice daily in cases with laryngeal lesions, whether ulcerative or not. No unpleasant results. Prompt relief of pain in every case, tendency of ulcerations to heal, hoarseness improved, and, where only infiltrations and edema, swelling markedly less after a few weeks. *Hinman.* 306

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

The X-rays will demonstrate much more accurately the extent of involvement than any other diagnostic agent. In determining the operability of a surgical condition in a patient suffering also with pulmonary tuberculosis, or in giving a prognosis in a known case of pulmonary tuberculosis, radiographic examination is essential. *Moore.* 367

TREATMENT. Frequency of gastric atony and dilatation, with resulting digestive symptoms and secondary toxic manifestations (aches and pains in chest and right hypochondrium, morning depression, insomnia, hepatic weight, vertigo, chilliness an hour after meals, fleeting edema, etc.), in pulmonary tuberculosis pointed out. Treatment: (1) Support to stomach and abdomen by Rose belt of plaster or moleskin, followed, upon improvement, by supporting belt to be worn continuously and later in daytime only. (2) No liquids with meals or for two to two and one-half hours after. (3) Lunch to be light. (4) Recumbency, with attempt to sleep for one-half to one hour after each meal. (5) No alcohol or fresh bread. (6) Medicinal treatment: Tr. nucis vomicæ, acidi hydrochlorici dil., āā f℥ss (15 c.c.); glyceriti pepsini, f℥iss (45 c.c.); aq. menthæ pip., q. s. ad f℥iij (90 c.c.). Teaspoonful in ½ glassful of water after meals. If much flatulence, add chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until relieved. (7) Cold shower or sponge baths, with needle bath to abdomen, followed by brisk rub, each morning. (8) Where mucous passages and flatus: Turkish towels, wrung out in hot water, to be applied to abdomen for one-half hour after meals. (9) Thorough mastication of food and abstention from worrying at meals. (10) Fats to be avoided at first. *F. N. Robinson.* 95

Measures to overcome fever described: (1) Where prolonged fever drains on patient's strength, pyramidon is drug to be preferred—5 grains (0.3 Gm.) in cachet at night, or, if necessary, three times a day. In neurotics bromides sometimes efficacious. (2) Rest in recumbency to be insisted on until temperature does not rise above 99° in men or 99.2° in women, when patient may sit in chair for two hours, then recline on couch, in open air if possible. Exercise then gradually in-

creased. (3) Where severe cough, sedative mixture tends to prevent fever from the exertion and autoinoculation. (4) Where rest and drugs fail, cautious use of tuberculin (T. R. or B. E.), beginning with only $\frac{1}{100000}$ mg., exerts antipyretic action, though often only for short periods. Tuberculin acts best in cases free from fever while at rest, but febrile when exercise taken. *Wethered.* Page 120

Value of auscultation at acromion process in apical tuberculosis emphasized; it amplifies all auscultatory signs over apices. Of 28 cases in first stage, all showed acromial breathing. *Magida.* 239

Guaiacol administration, beginning with 5 minims (0.3 c.c.) three times daily, increasing by 2 minims (0.12 c.c.) a week up to 12 or 15 minims (0.75 to 1 c.c.), and continuing the drug for four months or longer, yielded highly satisfactory results. The drug should be taken immediately before food. The following formula was used: Guaiacolis, f℥j (4 c.c.); alcoholis, syrupi limonis, āā f℥j (30 c.c.); spiritus chloroformi, f℥ij (8 c.c.); aquæ, q. s. ad f℥vj (180 c.c.). One-half ounce three times daily. *Mayberry.* 366

Typhoid Fever. TREATMENT. Venesection found to yield marked benefit in a case of typhoid fever with severe infection in toxemia. Removal of 6 to 14 ounces cannot do harm and may be productive of much good in such cases. *Rudolph.* 494

Ulcer, Gastric. DIAGNOSIS. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* 114

TREATMENT. Cream diet used with success in 26 cases. One quart (4 glasses) a day yields 1800 calories. To this may be added 600 c.c. of milk or 6 slices of bread or 5 tablespoonfuls of oatmeal gruel or 3 eggs. Cream causes inhibition of gastric secretion. If not tolerated in full strength, it may be diluted with equal or greater amount of milk. Ice-cream a useful variant. Some marked cases progressed to good recovery in two or three months under cream diet. Method adapted for bed or ambulant treatment. Also useful as prophylactic against recurrence of ulcer. *Nichols.* 169

Ulcers. TREATMENT. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

In old leg ulcers and infected wounds a dressing of mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), is of value. *Macfarlan.* 554

Urticaria. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Vaccination. Tincture of iodine, applied to the vesicle as soon as possible after the latter has formed, and repeated two or three days later, either prevents pustule formation or so limits it that the several pustules formed do not coalesce. The vesicles soon dry up and form a small scab. In not one of 116 cases so treated was there secondary infection with pus-producing bacteria, whereas in those not so treated about 30 per cent. were secondarily infected. There is no interference with the immunizing process. The scab should be kept covered with sterile gauze for several weeks. In cases of secondary infection with pus formation best results are obtained by removing the scab and pus, painting the base with tincture of iodine, and, when dry, covering with bismuth subiodide powder. Superfluous granulation tissue should be treated with a stick of silver nitrate. *Albert and Alden.* 369

Vomiting. TREATMENT. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Carbon disulphide, applied for fifteen seconds over the epigastrium, will produce the same effect as counterirritation with a strong mustard plaster for half an hour. *Seelye.* 542

Vomiting of Pregnancy. TREATMENT. Apomorphine, $\frac{1}{36}$ grain (0.0018 Gm.) in a teaspoonful of water, found effectual in a severe case; likewise in other cases of vomiting or nausea. *Field.* 182

Thyroidin in 1½-grain (0.1 Gm.) tabloids given in several cases, with complete curative effect. *Koreck.* 284

Brilliant results obtained in some cases by administration of thyroid preparations. *Walker.* 409

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1:1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received ⅓ c.c. as initial dose and ⅔ c.c. four days later; others, ½ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a bronchopneumonia as complication, a mixed vaccine should be used. *Davidson.* 118

Silver nitrate in 2 per cent. solution applied to throat in 95 early cases to prevent spread of infection downward from pharynx. Useful results in 84 instances. Mucus secretion prevented and coughing spells due to irritation by secretion minimized. Silver solution applied every day at first; later, and in older

children throughout, on alternate days. *Ochsenius.* Page 182

Epinephrin, 3 minims (0.2 c.c.) of 1:1000 solution, given every four hours in case in a child 7 years old, ill six weeks. Paroxysms markedly reduced almost at once. Drug then continued 3 times a day for three weeks more. *Lord.* 280

Wounds. TREATMENT. Stream of air from ordinary electric fan or register found useful in drying and promoting healing in large wounds, obstinate leg ulcers, and discharging eczema. *Heisler.* 182

Mixture of saturated magnesium sulphate solution and glycerin in equal parts recommended for dressing infected wounds. *Freese.* 304

Following summary presented: *A. Incised wounds:* 1. Paint with iodine. 2. Shave dry. 3. Tie all bleeding points. 4. Remove foreign substances. 5. Suture all tendons and nerves. 6. Again apply iodine in and around wound. 7. Suture wound. 8. Apply dry sterile dressing.—*B. Lacerated wounds:* 1, 2, 3, 4, 5, same as in *A.* 6. Cut away all damaged tissue. 7. Again apply iodine. 8. Suture wound.—*C. Punctured wounds:* 1, 2, same as in *A.* 3. Enlarge opening for drainage. 4. Insert rubber drain. 5. Alcohol dressing. 6. Tetanus antitoxin.—*D. Gunshot or bullet wounds:* 1, 2, same as in *A.* 3. If much bleeding, enlarge opening and tie vessels. 4. If nerve injured, suture nerve. 5. Close wound. 6. Alcohol dressing. 7. Tetanus antitoxin. *Hoag.* 307

Book Reviews

A TREATISE ON DISEASES OF THE RECTUM AND ANUS. Edited by A. B. Cooke, A.M., M.D., Formerly Lecturer on Diseases of the Rectum and Professor of Anatomy in the Medical Department, University of Nashville; Fellow and Sometime President of the American Proctologic Society, etc. Octavo of xvi + 619 Pages, with 215 Illustrations in the Text and 21 Full-page Plates, 7 in Colors. Philadelphia: F. A. Davis Company, 1914. Cloth, $5.50, net.

This work, originally begun a number of years ago by its editor with the intention of presenting a practical treatise based on his exclusive personal experience in the management of rectal cases, now appears as a textbook of multiple authorship, with the first 16 of its 30 chapters written, however, by the editor himself. The subjects he has dealt with comprise the anatomy and physiology of the anorectal region; general diagnosis and symptomatology; constipation and obstipation; fecal impaction; pruritus ani; proctitis and proctocolitis; nonmalignant ulceration; amebic dysentery; anal fissure, etc.; perirectal abscess; anorectal fistula; complications of fistula operations; hemorrhoids, and prolapsus. The subsequent chapters are on fibrous, non-malignant stricture, by W. M. Beach; benign neoplasms, by G. S. Hanes; colotomy and extirpation of the rectum, by G. B. Evans; rectal pathology due to extrarectal causes, by A. B. Graham; local anesthesia in anorectal surgery, by A. J. Zobel; injuries and rupture of the rectum and sigmoid and foreign bodies in the rectum and sigmoid, by L. J. Krouse; reflexes and neuroses of the rectum and anus, by C. F. Martin; relation of rectal diseases to the general health, by G. S. Hanes; rectocolonic alimentation, by A. B. Graham; developmental malformations of the rectum and anus, by F. C. Yeomans, and malignant tumors of the rectum, by J. Coles Brick. In spite of the plural authorship of the work, the views expressed in different sections are in entire accord on all essential points. Of the sections written by the author himself, those on amebic ulceration, anorectal fistula, and internal hemorrhoids are especially valuable, the details of treatment being presented with marked completeness as well as originality. Particularly noteworthy among the sections by other authors are those of G. B. Evans, on extirpation of the rectum; A. J. Zobel, on local anesthesia; J. C. Brick, on malignant tumors, and C. F. Martin, on reflexes and neuroses of the rectum and anus. The work is well balanced, contains a large and useful variety of original illustrations, and can be warmly recommended to the practitioner. The student who reads it will possess a sound and authoritative groundwork for subsequent practical work in the field it covers.

PSYCHANALYSIS: ITS THEORIES AND PRACTICAL APPLICATION. By A. A. Brill, Ph.B., M.D., Chief of the Clinic of Psychiatry and Clinical Assistant in Neurology, Columbia University Medical School; Chief of the Neurological Department of the Bronx Hospital and Dispensary. Second Edition, Thoroughly Revised. Octavo of 393 Pages. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.00, net.

In the second edition of this work new illustrative material of a practical nature, *e.g.*, analyzed dreams, and histories of various other cases, appears. In addition, two new chap-

ters have been introduced, and the text revised and amplified. The new material comprises discussions on artificial dreams, the unconscious factors in neuroses, collecting manias, pathologic homosexuality, and fairy tales as a determinant of dreams and neurotic symptoms. A glossary of psychanalytic and psychosexual terms has also been inserted. As before, the main object of the author has been to "present the practical application of Freud's theories." In spite of the vigorous opposition to the views of Freud that has arisen from many quarters, Dr. Brill is not disposed to recede in the least from any statements previously made, claiming that local critics "are constantly rehashing what was said abroad, and which was adequately answered long ago." He insists that psychanalysis is the most rational and effective method of psychic therapy, and points to the assent given to the chief of Freud's conclusions by Bleuler, August Hoch, Jung, Adolph Meyer, and Putnam. "One cannot expect to become proficient in psychanalysis," however, "unless he has mastered at least Freud's theories of the neuroses, the interpretation of dreams, the sexual theories, the psychopathology of everyday life, and his book on wit, and last but not least who has not had a training in nervous and mental work. Besides these qualifications one must know how to select his cases." Whatever be the limitations ultimately imposed by general consensus of opinion and experience upon the field of usefulness of psychanalysis, the author of this book deserves, at least, some credit for presenting Freud's system to the critical examination of the English-speaking profession in so readable a form.

A History of Laryngology and Rhinology. By Jonathan Wright, M.D., Director of the Department of Laboratories, New York Post-Graduate Medical School and Hospital. Second Edition, Revised and Enlarged. Octavo of 357 Pages. Philadelphia and New York: Lea & Febiger, 1914.

In this work the author has aimed not only at tracing the history of the medical study of the nose and throat, but also at linking together the facts gleaned with medical history in general, with the salient features in the early history of the civilization of mankind, and with the general literature that has a bearing upon the subject. Approximation of the style to that of an encyclopedia or dictionary has thus been avoided, but care has also been taken, while thus rendering the work more attractive, not to impair its accuracy. In the field of general literature, works such as those of Buckle, Guizot, Gibbon, Prescott, and Renan were consulted. The beginning of the book covers the specialty of the nose and throat as it figured in the medical system of the Egyptians, Chaldeans, Babylonian Jews, Hindus, Greeks before, during, and after Hippocrates, and the Romans. Next are taken up the laryngology and rhinology of Celsus, Galen, Greek writers of the Eastern Empire, the Arabians, as well as of the periods of Pre-Renaissance and Renaissance. Then come sections on the results of the renaissance; intranasal surgery and pathology of the seventeenth and eighteenth centuries; the prelaryngoscopic era; laryngeal phthisis; the laryngoscope; the tonsils; nasal anatomy, physiology, and pathology, etc. The terminal portions of the book are concerned with modern developments in respect of various special morbid conditions such as atrophic rhinitis, rhinoscleroma, laryngeal paralysis, etc. There are also indices of personal names and of subjects. In the present, second, edition the text has been carefully revised from the original draft, which had not been modified in the first edition after its appearance in instalments in a special periodical. The work affords decidedly good reading, especially in its first portion, and in its second part, with the many references contained, will prove useful to those who desire to examine the original papers of the investigators responsible for modern advances in laryngological and rhinological practice.

Hygienisches Praktikum. Ein Taschenbuch für Studierende, Aertze, und Kreisarztkandidaten. Von Dr. med. Paul Uhlenhuth, Ordentl. Professor der Hygiene an der Universität Strassburg, und Dr. med. Hermann Dold, Privatdozent der Hygiene an der Universität Strassburg. Pp. 272, with 89 Text Illustrations and 1 Plate. Berlin und Wien: Urban & Schwarzenberg. New York: Rebman Company, 1914.

This small work presents the German official course in hygiene in a somewhat expanded form. A clear, concise description is given of a wide variety of laboratory procedures required in the examination of the soil, water, solid foods, milk, butter, and other fats, meats, flour, alcoholic beverages, clothing, air, air currents, light, and illumination. It contains some tabular material, a sufficiency of illustrations, and lists of the apparatus and chemicals necessary in the various practical tests described. The book is surprisingly complete in its way—all purely theoretic matter having, of course, been omitted—and cannot fail to prove useful as a laboratory manual.

The General Field

Conducted by A. G. CRANDALL

Safe from Invasion

It is plain that the prompt determination of the English to participate in the great war was a big surprise to their opponents, who had secured the impression that the English were so peace loving that only an invasion of their country would be likely to rouse them.

Evidently the leaven of war-like aggressiveness which has been instilled in the English nation by a certain Pankhurst family was overlooked.

That the English have enlisted for the war and their fighting blood is up is made evident in numerous conflicts. And they have at home for close-range fighting, in case of an invasion, a reserve corps calculated to strike terror to any enemy, no matter how effective their "war machine."

In case of invasion there are the militants, each one equal to 10 Uhlans, each one prepared to chain herself to a rapid-fire gun, or rise on an aëroplane and pour tracts and sulphuric acid upon the enemy's officers. There is no question as to the safety of England from invasion. It is easy to contemplate a panic of the invaders that would choke the Thames from London Bridge to Gravesend.

* * *

Entire Wheat Flour

The "staff of life" is being attacked on every hand. Owing to the demand by ignorant housekeepers for ultra white flour and the desire of manufacturers to secure maximum profits, the flour of commerce is a wide departure from what physiology says it should be.

A contributor to the Medical Record regards the use of entire wheat flour in bread as one of the best of preventives of pellagra, as it has a tendency to clear the intestinal canal of accumulated toxins which might otherwise be absorbed. This is a parallel line of reasoning with that which explains the cause of beriberi as due to polished rice.

This is a superficial age and nothing shows this fact more plainly than the fanciful demand for foods. Such eras of world history have usually been followed by periods in which the human appetite was not nearly so finicky. A host of people who now demand dainties may yet be glad to get good plain German sauerkraut, with wiener schnitzel as a weekly luxury.

* * *

The Diet in Lactation

In a certain Eastern city it was reported some time ago that quite a number of graduated physicians were wearing uniforms and collecting 5-cent fares on the street cars.

Presumably these gentlemen would have preferred under reasonable circumstances to continue their gentle ministrations to the sick; but for some reason they have deprived themselves of that solace and are employed by a soulless corporation.

It is most natural that one should speculate as to the causes which led these possessors of the coveted sheepskin to resist the enticements of medical science and give their attention to commerce as personified above. While the guessing is good, here is a suggestion. We will guess that these medical men conscien-

tiously undertook to impress upon some of their women patients the suitable diet in lactation.

Let us suppose that the young physician has a deep-seated conviction that a young mother of an infant should provide all necessary nourishment for same herself. Granted that the mother complies with instructions, and adopts the indicated liberal diet comprising milk, cream, and easily digested starch foods. The baby will thrive prodigiously and so will the mother. But alas, not for long. The mother, in a panic at her rapidly increasing weight, will have sought another doctor and have passed the wireless signal to her friends.

The transition from the snug little office to the middle aisle of the street car is thus made clear.

This subject might be amusing if for a great variety of reasons it were not very much the reverse.

* * *

A Million Boarders

The director of public health of the city of Philadelphia has issued an important statement. He says there are a million rats in Philadelphia at the present time, and that not nearly so many are needed.

It should not be presumed that the director has had a census made of these rats; presumably it is mere guesswork on his part, and if somewhat annoyed by personal experiences with rats he may have somewhat exaggerated his estimate. On the other hand, it is more than possible that his figures are altogether too conservative.

At any rate a million rats are a considerable tax upon a thrifty community. With much business depression in the city there is enough demand upon its charitable facilities exclusive of the large rat population.

If it were possible to make an accurate estimate of the actual damage done by these undesirables through the destruction of property and the carrying about from one domicile to another of the germs of disease, it is probable that the figures would be staggering. It is human nature to overlook the perils which are not seen, but under no condition should the rats ever be overlooked, as probably no system of public improvement that the city can adopt will give better returns than will an efficient program of extermination against rats.

* * *

Those Panama Mosquitoes

We have all read with great admiration of the annihilation of the mosquito pest on the Canal Zone, which made the building of the Canal possible. This has seemed to be a most marvelous achievement, but it is possible that our idea of mosquito ferocity at the Isthmus of Panama has been exaggerated.

It is said that the original Indian inhabitants of the Antilles were much more amiable and gentle in their disposition than were the Mohawks of the North. It is possible that similar difference of temperament may have existed between the Panama mosquitoes and those of Jersey.

In any event we would like to see some of those Canal Zone tactics tried out in the region across the Delaware. We have an idea that the emancipator of Panama would find a foeman worthy of his mightiest achievement and as much more ferocious than its Southern cousin as was the painted Algonquin of Sche-

nectady more bloodthirsty than the gentle savages who accompanied Columbus back to Spain. We feel sure that no system of mosquito warfare would conflict with the New Jersey game laws, and that no limit would be placed on the day's bag.

* * *

Catching Cold

A prominent New York physician has written a treatise on clinical medicine in which he attributes most of the causes of disease to catching cold.

The probabilities are there will be many dissenters to his views, and that, while this theory will be regarded as original and picturesque, it will not produce a marked influence on prevailing clinical methods.

However, if there could be a general elucidation on the causes of taking cold, it is probable that all that this distinguished author has been seeking to accomplish would be carried out and that the average span of life would be greatly increased.

Taking cold seems to be mainly a symptom of a general condition, which makes itself manifest in this form instead of in some other way. A great many observers consider this predisposition to colds as an indication of a state of repletion, which inevitably tends to a diminution of physical efficiency.

A very intelligent man of middle age, of sturdy build and physique, announced his intention of never having any more colds. He said he had discovered to his entire satisfaction just how they could be prevented. It was all a question of judgment in diet. He certainly was a most excellent physical exponent of his theory, but unfortunately, as an evidence of how matters go to extremes in this life, he died before he had the opportunity to fully carry out to a logical conclusion his system of health and longevity. He perished in a fire which consumed his dwelling in the middle of the night.

There has seldom been a more propitious time in which to test the abstention method for the prevention of colds than at present, when prices of food products continue to soar.

* * *

The Cardiac Effects of Motoring

Closely following the advent of the automobile were devices for measuring the blood-pressure, while at the same time there has been a largely augmented curiosity manifested by physicians as to the composition of the blood.

A medical observer has noticed that the motorist is quite prone to do very little walking although having a largely increased appetite as the result of the rapid ride in the open air. Coincident with these conditions there is apt to be an increased blood-pressure.

The blood-pressure instrument is, therefore, quite frequently applied to the motorist. On the contrary, an entirely different process of investigation seems to be required for the pedestrians, who are busily engaged during the business hours in dodging the onrushing automobile.

Take two examples of late middle life: One the well-fed motorist and the other the woman of neurotic type; these two individuals might have occasion to consult the same physician, during the same office hours. The competent physician would promptly resort to his blood-pressure instrument in the one case, while in the other he

will with equal logic and reason make a blood-count.

Now this entirely routine procedure if traced back to its original source will naturally involve the automobile. On the one hand, the motorist consumes altogether too much food, owing to the fictitious appetite above referred to; in the other instance the corpuscle deficiency could quite likely be traced back to the blood-curdling influence produced upon the neurotic female in question by the hideous siren operated by the high blood-pressure motorist who was "next" in the consultation room.

It is evident that to the already large list of automobile accessories there should be added devices for recording the cardiac phenomena identified with this great modern sport.

* * *

The Sutlers

Civil War veterans recall the parasites who, skulking in the rear of the army, were amassing small fortunes through the sale of small luxuries to the soldiers. Naturally they were not in evidence when the battle was on, but were taking the best possible care of themselves.

We have seen the same spirit manifested lately. The wholly inexcusable advance in food prices is a natural parallel with the enterprise of the army sutler. A multitude of poor families have been forced to pay an exorbitant price for necessaries in order that the sutlers could secure unreasonable profits.

Every city and large town should conduct municipal markets where people who are willing to carry their supplies home themselves may be assured of fair dealing and fair prices. Such an enterprise is in the interest of public health and public morals, providing an evidently necessary check upon the rapacity of those who, owing everything to the public, are, nevertheless, public enemies.

* * *

Petroleum

It is difficult to understand how the world managed to exist so many centuries without petroleum.

One of the literally crying needs for petroleum is only now being made clear. A contributor to the London Lancet pronounces this world benefaction to be a panacea for infantile colic. Administered to the most pronounced pessimist of the extreme juvenile type, it acts like a charm. The evident regret that he has ever been born is succeeded by a bland serenity and a new outlook on life which is shared by the attendants.

Petroleum is recommended for numerous other ailments of humanity, both internal and external. In fact, the more one can be brought into juxtaposition with this great product the better. A farmer who was greatly troubled with chapped hands had a leaky kerosene lantern. To his surprise he discovered that this annoyance had in some way resulted in curing his hands.

Life at its best seems to be one successive round of pleasures with petroleum. Starting with the cradle, it cures colic. It protects the skin from the elements, and the mucous membranes from irritations. The enlivening odor of gasoline pervades the delight of motoring, as well as the process of removing from fabrics the stains of travel. Therapeutically, mechanically, and socially, petroleum stands in the front as a Rockefeller Foundation of Comfort.

MONTHLY CYCLOPEDIA
AND
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NEW INTERNAL SECRETIONS AND A NEW FUNCTION OF THE BLOOD-VESSELS.*

BY R. LÉPINE, M.D.,
LYONS, FRANCE.

WHEN a gland is not provided with an excretory duct, there is ground for supposing that it throws into the blood an internal secretion, but this cannot be, *ipse facto*, affirmed with certainty. Blum a few years ago still held that the thyroid gland does not produce such a secretion and that its sole function is to destroy toxic substances. Metzner, as regards a secretion of the spleen, remains doubtful. To the author, however, it hardly seems that one can doubt its existence, for Schiff, Herzen, and others have shown that this gland exerts an influence upon the production of trypsin in the pancreas. The author has personally performed experiments which have seemed to him to justify this view.

Like several of his predecessors, Brown-Séquard thought that internal secretory products must be sought for in the venous blood, and that "if the fluid derived from the tissues yields insufficient results, it is the venous blood from these parts that must be injected." This assertion appears to the author quite open to question, for there are definite facts proving conclusively that the venous blood of an organ does not always clearly contain its internal secretion—thus, various investigators have failed to find that blood from the pancreatic vein excites glycolysis. True, Hédon, causing the blood from the caudal pancreatic vein of a normal dog to pass into the venous system of a depancreatized dog, found the glycosuria in the latter

* Summary of article in Revue de médecine, February, 1914.

animal to be considerably reduced thereby; but the glycosuria did not entirely cease, nor was the hyperglycemia diminished to a noteworthy extent. This was due to the fact that the lymphatics could not be taken into account in this experiment. The lymph of the thoracic duct (especially after stimulation of the nerves to the pancreas with the faradic current) has a very pronounced influence in activating glycolysis (Lépine and Boulud), and proof that a flow of lymph is essential for general glycosuria has been supplied by Biedl who, upon interrupting this flow by ligation of the thoracic duct or the production of a fistula leading the lymph to the exterior, observed glycosuria as a result in two-thirds of the dogs thus operated.

That a portion of the internal secretion of an organ should be delivered through the lymphatics, which constitute the natural efferent pathway for the interstitial fluids bathing the tissues, cannot be deemed surprising. It is even a possibility that, at least in some organs, it is only the excess of internal secretion which passes into the vessels, by virtue of complex physical laws as yet far from being well understood. If, for example, the interstitial fluid of an organ contains more than 4: 1000 of sugar, and if the endothelial cells of the lymph-spaces and capillaries do not stand in the way, a portion of this sugar will necessarily pass by osmosis into the blood, which contains only 1: 1000 of sugar; but, unless the endothelia are endowed with special properties, not all the sugar will pass into the blood. Just how much actually will enter the blood cannot be stated. (Ishimori, after puncture of the floor of the fourth ventricle, found the lymph-spaces of the liver greatly dilated, and even containing glycogen granules.)

To obtain complete information concerning the internal secretion of an organ it would be necessary to collect not only the venous blood but also the lymph, and to be able, by chemical or biologic methods, to estimate the amount of internal secretory principles present. This cannot now be done, but in spite of the great difficulty attending collection of the lymph from the narrow lymphatic channels, it is not impossible that, through progressive improvements in technique, the fluid will in future become available, either directly or by an indirect method, *e.g.,* by collecting the lymph from the thoracic duct after having interrupted the flow of lymph into it from certain definite regions.

On the other hand, that a portion of the internal secretions is discharged directly into the blood has been established. The passage of certain of these secretions in the blood is, in fact, greatly facilitated by a histologic feature pointed out by Minot, viz., that in some organs the blood capillaries are in immediate contact with the parenchymatous cells. Indeed, in certain localities these capillaries, according to Minot, lose their own endothelium.

The author recently discovered, with Boulud, that a segment of a vessel (artery or vein), if obtained immediately after the death of the animal and immersed in the blood issuing from a vessel preserved as far as possible from glycolysis, has the power to split off the combined sugar in the blood. If placed in a solution of phloridzin it will likewise cause cleavage of the latter, in part at least; a solution of monobutyrin is also

partially broken up by it. Thus it is clear that vascular wall tissue can set free ferments. The latter can be extracted with water, for water used to wash a vessel exhibits the same property as the vessel wall itself. Passage of these ferments from the vessel walls into the blood takes place under normal conditions, for normal blood contains them—although, to all appearances, in rather small amount. Under certain conditions, the amount in the blood is manifestly increased. In respect of the ferment that splits off combined sugar in the blood, this was proved in the following experiment of the author: A cannula was placed in each femoral vein, the sciatic and crural nerves cut on one side only, and a sharp blow with a mallet delivered on the animal's head in order to produce pronounced concussion of the brain, with temporary arrest of respiration, etc. One or two minutes after the mallet blow, blood was collected simultaneously from the two veins and kept under conditions inimical to glycolysis. Then fifteen or thirty minutes later, the amount of sugar in the two samples of blood was ascertained. The blood from the side with uncut nerves was found to contain more sugar than that from the side upon which the nerves had been cut. This fact, observed repeatedly by the author, is apparently to be explained thus: As a result of the cerebral concussion there was produced in the tissues, on the side of the uncut nerves, some substance of the nature of a diastase which caused *in vitro* liberation of glucose at the expense of the combined sugar in the blood. This substance could, of course, not be produced on the side on which the nerves had been cut, the influence of the cerebral concussion not being exerted because of their section.

Other observations have shown that a nervous influence increases (through the ferment already referred to) the combined sugar in the blood. Seegen, for example, after faradic stimulation of the crural nerve, found the sugar in the femoral vein increased in amount; it was not increased upon direct stimulation of the muscle. Asher and Karauloff have similarly noted an increase in the amount of sugar in the submaxillary vein upon faradic stimulation of the chorda tympani. Thus, a nervous influence is capable of increasing the blood's asset in free sugar in the area supplied by a stimulated nerve. As the saliva contains no sugar, unless it be in exceptional instances, it is probable that the sugar produced in the capillaries of the submaxillary gland is consumed in setting free energy. Seegen's observation tends to show that combined sugar is liberated in the capillaries of muscle tissue during muscular contraction.

Not so many years ago our knowledge of the physiology of the blood-vessels was confined to the vasomotor action which regulates the capillary circulation and, in part at least, the blood-pressure. Yet over thirty years ago Ludwig and Brasol had already shown that a few moments after an intravenous injection of glucose, before the kidneys could eliminate an appreciable quantity of it, the glucose was no longer in excess in the blood, having passed into the lymph and tissues. This almost instantaneous depuration of the blood, ofttimes noted, has since been studied after intravenous injection of various salts, sodium chloride in particular. Thus, the blood-

vessels have in themselves the power to eliminate from the blood substances present in it in excess. But they are also capable of causing to enter into the blood substances present in excess in the tissues and useful internal secretions, notably ferments: An hypoglycemia, *i.e.*, the presence in the blood of an amount of sugar less than normal, causes transudation through the endothelium of a ferment which, by its activity, increases the quantity of sugar in the blood. Probably Hanriot's lipase or fat ferment likewise passes into the blood when there is a need for the liberation of energy. Achard has found the lipase in the blood serum increased in diabetics, perhaps in order to make up for the insufficient glycolysis. Thus, the small vessels can, on occasion, supply an increased amount of energy not only through vasodilatation but by causing ferments to pass into the blood.

Is this entrance of ferments into the blood the result of an actual secretory process? Such a possibility cannot be countenanced, for the flat endothelium of the vessels does not present the features of a true secreting cell; it allows to pass in, however, to a greater or less extent, according to conditions as yet unknown, the ferments already existing in the adjacent tissues. The results of experiments performed by the author with Boulud proved this; the aorta was found to contain ferment even after the intima had been removed from it by scraping. It is known, moreover, that the ferment which breaks down phlorizin is present in the renal parenchyma, and Hanriot's labors have shown that the lipase of the blood (which is not identical with that of the pancreas), is met with in the liver. These ferments are more widely distributed than has hitherto been thought; the author has found them in the omentum, the pericardium, the spleen, the nerve trunks, etc. It is even possible that they are produced in all tissues.

THE MEDICAL MANAGEMENT OF EXOPHTHALMIC GOITER.*

By ROBERT ABRAHAMS, M.D.,

NEW YORK, N. Y.

Prevention.—As in all other affections prevention in this disease is superior to cure. Preventive measures may not succeed in every case, but one's efforts are rewarded in some. The foundation of the trouble, the author believes, is laid in the turbulent days of puberty. It is a matter of common observation that the thyroid gland in young girls swells before and partly during menstruation, to return again to normal size when the period is over. The disturbance of the nervous system before and during menstruation manifests itself in many ways. These manifestations are apparently physiological, but their frequent repetition concurrently with added work, excitement, worry, or disappointment, increases and aggravates the normal manifestations and the nervousness becomes pathological. Under

* Summary of article in the Medical Record, June 20, 1914.

such circumstances, at every returning menstrual period the thyroid gland is found larger and larger until the increase in size becomes permanent. Then, if not before, the heart action grows rapid, the tremor of the hands is rendered visible, and one or two of the many eyelid signs will appear, if not the exophthalmos itself.

The prophylaxis is simple, viz., upon noticing these nervous disturbances and enlargement of the thyroid, one should insist on absolute rest both of body and mind before and during menstruation. If there be any elements of disquiet they should be promptly and radically removed.

Persistent polyuria in a young woman is a forerunner of Basedow's disease. Frequent and excessive micturition is occasionally associated with exophthalmic goiter, but he who interprets this sign properly, long before serious clinical symptoms appear, may prevent the occurrence of the disease. The author has under treatment a young woman with exophthalmic goiter who gives a history of polyuria which preceded the goiter, exophthalmos, and rapid heart by fully six months.

Another suggestive sign of the approach of exophthalmic goiter is unaccountable and persistent night-sweats occurring in young women without any discoverable organic lesion. These patients frequently have also palpitation of the heart.

Still another sign which occasionally heralds the onset of exophthalmic goiter in young and middle-aged women is paroxysmal tachycardia. After a time the paroxysmal attacks become continuous, constituting one of the four cardinal signs of the disease.

Yet one more sign which the author observed in one case and which preceded the disease by many months, occurring in a young anemic girl, was uncontrollable diarrhea, without a discoverable cause.

All these signs are danger signals. A quiet mode of living, digestible and nutritious food, suitable tonics, and a change of climate will prevent the occurrence of the disease.

Curative Treatment.—The treatment of a full-fledged case of exophthalmic goiter is difficult but not hopeless. One encouraging feature is the readiness with which patients lend themselves to every new form of treatment, with confidence that the new remedy will surely cure them. Such hope and cheer favorably affect a psychically disturbed patient. The ideal treatment of exophthalmic goiter consists in complete isolation, rest, and freedom from all care and worry. With such treatment no medicinal agents need be associated. Yet one sees many cases of classical Basedow's disease in jaded and careworn housewives do as well as their more favored sisters of leisure, with only the ordinary remedies.

One should never grow weary of looking for a cause in every case. If diligent efforts in that direction are not successful, syphilis should be thought of as a possible cause. In 1901 the author diagnosed and successfully treated 3 pronounced cases of exophthalmic goiter of syphilitic origin. He now advises that a Wassermann test be made in every case. Weber reported a number of cases of Graves's disease treated with *arsenic* and

mercury bichloride internally and cured; those were undoubtedly of syphilitic origin. Similarly, the literature of the disease abounds in instances where the external application of a *mercurial ointment* or *plaster* to the thyroid gland and the internal use of *iodides* resulted in either complete cure or very marked improvement. If a Wassermann is not available, one should resort to the therapeutic test, the patient taking potassium iodide for a week or so, added to or coupled with corrosive sublimate. If the patient shows signs of improvement the goiter may be assumed to be of syphilitic origin; if, on the other hand, the patient gets worse, the origin of the disease is not luetic.

The most distressing sign of Graves's disease is the rapidity of the heart action. In the author's experience tincture of *strophanthus* given in 5- or 10- minim doses, three times a day, has been most useful to steady the heart. For a long time strophanthus was discredited in Graves's disease for the reason that it produced diarrhea. At present, the tincture of strophanthus is free from this drawback. If strophanthus fails, tincture of *belladonna* in the same dose is a good "second best." Strange to observe, digitalis, the sheet anchor in many a form of cardiac disease, acts badly on the heart in Basedow's disease, although there is noted a strong functional similarity between the heart of Basedow's and some types of rheumatic cardiac lesions.

The other distressing conditions in exophthalmic goiter are tremor and nervousness. These are very well controlled by means of *ammonium bromide* in doses of 20 grains (1.25 Gm.) three times a day; this need be given for a short time only, for when the strophanthus begins to act the nervousness subsides, as a good share of it results from the consciousness of a rapid and pounding heart. The *lukewarm shower-bath* is another means to allay tremor and nervousness. The bath also works well as a hypnotic. *Iron* is rarely indicated, an opiate never. Once in a great while, when the patient is much disturbed at night with frequent urination, ¼ grain (0.016 Gm.) of *codeine* taken at bedtime will mitigate this evil.

There is no direct means of reducing the size of the thyroid except by the general method of treatment described. Yet *plaster* of any kind,—*belladonna, zinc,* or *adhesive*—seems to reduce the size of the gland, the reduction being apparently affected by pressure of the plaster. The author has seen a fair degree of diminution of the thyroid obtained by repeated application of *flexible collodion.* The patients instinctively know the value of external pressure as they learn to put ribbons tightly around their necks (although in the beginning the ribbons are employed to hide the deformity).

The eyes rarely need attention, although in one extremely severe case the eyelids were partially sewed up to keep the eyeballs from falling out.

The *diet* should be of the simplest kind; some of these patients have ravenous appetites for a time. The author indulges them until they are satisfied; after they are surfeited they become docile and are willing to take advice. Tea and coffee are the bane of exophthalmic goiter, and must be absolutely forbidden.

The author has used *Beebe's serum* and also the *antithyroidin* of *Möbius.*

Unlike Beebe's serum, the latter is given by the mouth. The dose ranges from 10 to 30 drops three times a day. The author reports a complete cure in one case. Another, at present under treatment, is doing remarkably well under the serum. This case failed to respond to complete rest in bed, strophanthus, belladonna, and Beebe's serum. After taking the antithyroidin the young woman was able to go to work and climb five flights of stairs several times a day without dyspnea, and remained free from nervousness.

Exophthalmic goiter once in a while is recovered from without treatment; more often its symptoms are held in abeyance by medical measures; occasionally ordinary remedies cure it. In view of all these considerations surgery should be the last resort. None of the author's patients were operated on.

FAMILIAL OBESITY WITH DISTURBANCE OF THE DUCTLESS GLANDS.*

By Dr. LAIGNEL-LAVASTINE,

AND

Dr. PITULESCO,

PARIS, FRANCE.

Of late the adiposogenital syndrome has been extensively studied and its relations with pituitary insufficiency shown. The most recent clinical and pathological observations, however, have seemed to indicate that the actual facts exceed in their complexity the theories already vouchsafed in this field. The author reports, as a contribution of additional material toward the elucidation of these problems, the history of a family, several members of which showed marked obesity in association with a certain degree of genital infantilism.

The case described in greatest detail was that of a woman 36 years of age. Already in childhood she had been notably stout; the condition became more marked as puberty approached. Menstruation began only at 18. During the six months following marriage there was but one menstruation. A normal pregnancy followed, but since then the patient had been amenorrheic and had not again become pregnant. In a few years obesity increased so markedly as to lead her to seek medical advice. Various forms of treatment at the hands of different physicians, including strict dieting, failed to arrest her increase in weight. Upon coming under the observation of the authors, she presented large fat deposits in the abdomen, pubis, breasts, thighs, hips, axillæ, and neck. The face, hands, and feet were less affected. No nodes or tender tumors could be detected in the fatty masses; yet the fat was not uniformly distributed, a species of lobulation being felt upon palpation. The patient had no spontaneous pain, with

* Summary of article in Bulletins et Mémoires de la Société médicale des Hôpitaux de Paris, February 19, 1914.

the exception of pain in the calcanea after fatigue. Rather forcible palpation of the fatty masses did not cause pain. The skin, distended by the fat, showed well marked striæ, and in its depth, a fine vascular network. The internal reproductive organs could only with difficulty be examined and the fat prevented an estimation of their size. The patient's lashes and eyebrows were mostly gone, and the pubic and axillary hair was entirely wanting, but the scalp hair persisted in fair abundance. The eyes were slightly prominent; this mild exophthalmos had appeared after the onset of obesity, according to the patient's statement. The pulse rate exceeded 90 per minute. X-ray examination did not reveal any appreciable changes in the sella turcica. The patient's weight was 136 kg. (300 pounds) and her height 1.82 meters (5 feet, 11½ inches). Psychically, the patient showed a slight excess of emotional sensitiveness, with sweating and exaggerated apprehension as to her health. She was rather jealous of her husband, and had thoughts of persecution on the part of the passers-by, who "made fun of her," etc. Latterly, she had expressed the intention of committing suicide on account of her condition, which she felt to be displeasing to others. Attempts at organotherapy with ovarine and ocreine (corpus luteum), then with thyroid substance, and finally with pituitrin administered intramuscularly were entirely unsuccessful.

The second patient was the sister of the preceding, 23 years old. She had married three years before, but had never menstruated and did not become pregnant. Her corpulence recalled that of her elder sister at the same age. The other features of obesity present in the preceding case were however, lacking or but slightly marked. The internal reproductive organs, examined by a gynecologist, were found small, and the ovaries were insensitive to palpation.

A brother of the two patients, 42 years of age had sought advice because of sexual impotence of long standing. Since puberty he had always been diffident of females, and "felt ashamed" in their presence. Homosexual tendencies were manifested at puberty, and passive sexual relations were practised both before and after marriage—in the later instance because of an unnatural aversion to his wife. He had no children. The genitals were found undeveloped, the testicles being small and soft and the penis small, and a large congenital inguinal hernia was noted. The other secondary sexual characteristics—pubic and axillary hair, mustache, and masculine voice—were but slightly marked. The patient's manner and gestures somewhat suggested femininity. Mentally, he was easily upset, and he showed slight tachycardia and exophthalmos. There was also a manifest tendency to obesity, the patient's weight being 98 kg. (216 pounds).

The preceding patient's elder brother was also hyposexual, having refused to marry, according to the brother, by reason of a timidity similar to his own. He was quite as stout as his sisters and brother.

The son of the first case referred to early showed a tendency to grow tall, being at 17 as tall as his mother (5 feet, 11½ inches). Incipient obesity was also apparent. The genitals seemed normally developed.

Summary and Discussion.—In this (Hebrew) family there had been 13 children, of whom only the 4 referred to lived, each of these exhibiting the same adiposogenital symptom-complex, manifested by obesity plus, in males, genital infantilism, sterility, and sexual perversion, and in females, late or lacking menstruation and slight or lacking fecundity. Eight of the remainder had died at an early age and the ninth had committed suicide at 16. The sole descendent in the third generation was likewise obese. The mother of the 13 (first generation) was stated to have been rather stout. The unusual stature of these subjects is also to be noted, and in some, the signs of incipient exophthalmic goiter.

In the first patient, the obesity presented the features of Dercum's disease in its diffuse form. The less pronounced obesity in the other members of the family might be considered, in view of the family relations, as an attenuated form of the same condition. From the standpoint of pathogenesis, one cannot but think of a relationship of these cases to the forms of obesity associated with genital infantilism and gigantism. Nevertheless, no pituitary abnormality could be discerned upon X-ray examination of the first case. The adiposogenital syndrome, in common with simple pituitary obesity, does not, indeed, necessarily imply the existence of a pituitary tumor. Cushing, Roussy, and others have shown that the adiposogenital syndrome may be produced by brain lesions merely in the vicinity of the hypophysis. The experiments of these authors have also shown the variable nature of the cause of this syndrome, its frequent dissociation, and the possibility of reproducing experimentally only one of its features.

The tendency to obesity in the entire family can hardly be explained through overeating, and an inherited predisposition seems clear. The authors consider that the term familial Dercum's disease—in a more or less attenuated form—can be applied to this group of cases, though in some of them the condition shows a transition from this form to ordinary familial obesity. The subnormal development of the reproductive organs in these cases and the diminution in the secondary sexual characteristics occurring not after but consentaneously with the increase in fat deposition seem to depend not upon the obesity itself but upon underlying disturbances of glandular function. The associated tendencies to alopecia, gigantism, and Basedow's disease also constitute evidence in favor of a polyglandular disturbance. The hypophysis is apparently involved in view of the constant obesity and more or less marked gigantism; the sexual glands, in view of the genital infantilism and its anatomic, physiologic, and psychic consequences, and likewise the thyroid, in view of the mild Basedow phenomena and perhaps the alopecia, though the latter would seem rather to be related directly to the genital insufficiency.

Although no Wassermann test could be performed—no inherited syphilitic stigmata being, however, apparent,—the possibility of syphilis as the original cause of the condition is suggested in view of the early death of a majority of the children in the family and the fact that syphilis is known to be the origin of many family dystrophies.

THYMUS AND THYROID.*

By A. P. DUSTIN, M.D.,
BRUSSELS, BELGIUM.

Physiologic and especially clinical observations seem to have shown clearly that close relations exist between the functions of the thyroid and the thymus. Basedow's disease, hitherto classed as a symptom-complex of thyroid origin, appears in some cases to originate in a disturbance of the function of the thymus. Though as yet only feebly supported by experimental evidence, this conception of the pathogenesis of the disease has already won recognition in surgery.

On the other hand, the thymus, experimental and clinical studies of which are now beginning to yield distinct advances, seems to be functionally related with the majority of organs and tissues. In this connection may be mentioned the relations of the thymus with hematopoiesis, with the sexual glands, with the lymphatic system, with the osseous system in its stage of growth, and with the nervous system (thymoprive idiocy). Each of these relations still demands thorough experimental investigation. Though apparently of varying nature, they are probably all susceptible of the same general explanation.

As regards the relationship of the thymus to the thyroid, the author sets forth investigations recently conducted by him on the development of the thymus in amphibia. As Gudernatsch first showed, tadpoles fed exclusively on thyroid substance rapidly show peculiar changes of form, comprising an abnormally early and accelerated growth of the limbs and shortening of the caudal fin, *i.e.*, the tadpoles exhibited all the signs of an exaggerated rate of development. Soon, however, these larvæ, incapable of proper nutrition and probably poisoned by toxic products, die *en masse*.

The author subjected to thyroid administration not only tadpoles in all stages of development receiving a normal diet, but also tadpoles previously fed exclusively with thymus substance. The latter are especially large and also contain a very large thymus, rich in small thymic cells. The first interesting fact presenting itself in the case of tadpoles fed first with thymus, then with thyroid, was that these tadpoles proved as sensitive to thyroid as normal ones; within five days the phenomena of metamorphosis became manifest and the animals succumbed *en masse*. As these larvæ contained a large thymus, it is permissible to conclude that the thymus does not exert a direct neutralizing action upon the thyroid principle.

Another question to be looked into was the direct influence of thyroid feeding on the thymic tissue. It was found that such feeding results in an intense pyknotic degeneration of the small thymic cells, the other intrathymic

* Summary of article in Annales et Bulletin de la Société royale des Sciences médicales et naturelles de Bruxelles, vol. lxxii, No. 5, 1914.

cells (vessels, myeloepithelioid cells), however, not showing any appreciable change. From this experimental fact, clearly established, interesting deductions can be made. Normally, in the majority of thymus glands examined, there are found a few small thymic cells in a state of pyknosis. This is generally considered an accidental condition, but from the author's viewpoint, pyknosis of the small thymic cell is one of the normal modes of disappearance of this type of cell, and represents one of the fundamental functional manifestations of the thymus. The author's experiments showed that these phenomena of pyknosis can be provoked and considerably augmented under the influence of the thyroid secretion. On the other hand, taking up the functional changes noticeable in the thymus, he is led to formulate the two following propositions:—

1. The only cellular elements constantly present in the thymus of vertebrates, and characteristic of this organ, are the small thymic cells; all the other cells (myoid, epithelioid, Hassall, and granular cells) are nontypical and inconstant, and can only take part in an auxiliary manner in the function of the organ.

2. The only constant and unquestionable functional variation in the organ, in all vertebrates, consists in a rarefaction or multiplication of the small thymic cells in accordance with the nutritive state of the organism or, more precisely, with the supply of and demand for nuclein.

All causes leading to a diminution in the organism of, say, "chromatin" —confining the argument to this substance in order to remain on a basis of observed facts and to avoid speculation as to the chemical processes, probably very complex, taking place—bring about atrophy of the thymus. Among such causes may be mentioned starvation, infectious diseases, suppuration, blood production, the elaboration of sexual products, growth, and perhaps also, demand of the nervous system for cytochromatin or Nissl bodies.

All causes leading to an increase of chromatin lead, on the contrary, to hypertrophy or, in the adult, at least to a longer period of preservation of the thymus. Among such causes are overfeeding, castration, intraperitoneal injection of egg yolk, etc.

The thymus appears to be an indispensable intermediary, perhaps in the elaboration, certainly in the accumulation, and probably in the distribution of nuclear components, to the entire organism, according to the requirements of the latter. Thus are readily understood the importance of the thymus during the period of bodily growth, its rôle in the process of ossification, its relative atrophy in the period of the formation of sexual products, and its intervention in the formation of blood-cells, all these being processes requiring a large supply of chromatin and a redistribution of the nuclear components in the organism. This conception of the thymic function permits of correlating most of the isolated and often apparently contradictory data to be found in literature. The author believes that it may throw light on a number of chemical (gouty affections) or morphologic (neoplasms) disturbances of the metabolism of nucleins. In the aggregate of

the important functions of nutritive regulation and hence of growth and tissue renovation the thymus plays an important rôle. The co-operation of other organs is, however, indispensable; the liberation or even the destruction of chromatin in the thymus can be provoked and governed by the activity of the thyroid.

ABSORPTION OF EPINEPHRIN FROM THE NASAL SUBMUCOSA.*

By J. D. PILCHER, M.D.,

CLEVELAND, OHIO.

W. B. Chamberlain having called attention to the unusually pronounced vascular effects occasionally obtained from the injection of epinephrin and cocaine into the nasal submucosa in nasal operations, the thought suggested itself that the nasal submucosa must be an unusually good absorbing surface, since neither epinephrin nor cocaine produces these marked effects on hypodermic or even intramuscular injection.

Experiments were performed by the author in which epinephrin was injected into the submucosa of the nasal septum and anterior turbinals of 15 dogs under anesthesia. The blood-pressure was recorded from the carotid artery. The usual dose of the drug was $\frac{1}{20}$ c.c. of the 1:1000 solution per kilogram of animal. Following about one-half of the injections (21 of about 40), there was a striking rise in blood-pressure. The mean rise in all injections was 50 mm. of mercury, with extremes of 10 and 160 mm.. In 3 experiments the maximal pressure attained was over 200 mm. (265, 238, 215 mm.). The pressure may rise quite promptly, reaching the maximal level in not more than thirty seconds and returning to the normal level within from two to four minutes. This effect is practically the same as that obtained from the rapid intravenous administration. In a somewhat larger number of experiments the pressure rose more gradually. The vascular effect seemed to depend somewhat on the pressure exerted in injecting the solution. When considerable pressure was required to introduce the epinephrin, a greater vascular reaction was usually obtained. The epinephrin was given at all levels of blood-pressure (from 30 to 170 mm.), and in one experiment, on the injection of $\frac{1}{15}$ c.c. per kilogram of epinephrin, the pressure rose from 30 to 190 mm.,—the maximum rise attained in any experiment.

Discussion.—1. These experiments show that the submucosa of the nasal passages forms an excellent absorbing surface, at least for epinephrin, and probably therefore for other drugs. Evidently this is due to the very great vascularity of the region, the injected material at times passing directly into the venous circulation, as was shown in the following manner: Injections of carmin gelatin were made into the turbinals and septa of

* Summary of article in the Journal of the American Medical Association, July 18, 1914.

several dogs either shortly before or after death. Microscopic examination of sections of these parts showed portions of the injected mass in the lumen of the veins, not only at the site of injection, but also at some distance from it.

2. The administration of epinephrin in this manner clinically may possibly be of serious moment. On the other hand, in persons in whom a sudden rise of blood-pressure is especially contraindicated—those with cardiovascular disease, arteriosclerosis, etc.—the nasal submucous injection of epinephrin may well be of serious moment. In susceptible persons, enough epinephrin might be absorbed to effect a serious rise in blood-pressure. A case in point met with in the experiments was as follows: A dog had received a non-fatal dose of phenol intravenously; this was followed in a few minutes by a nasal submucous injection of epinephrin. The blood-pressure rose rapidly, and when the maximum level was reached, the heart dilated and the animal could not be saved; the heart, weakened by the phenol, could not resist the high pressure due to the epinephrin.

3. In conditions of circulatory collapse necessitating rapid stimulation, the injection of epinephrin into the submucosa of the nasal septum or turbinals could well be of much value. The technique is simple and the quantity of the drug readily controlled. The method is of course not as satisfactory as the intravenous method when the latter is feasible, which is not often the case, however, in instances of sudden failure of the heart.

THE RELATION OF HYPERTHYROIDISM TO THE NERVOUS SYSTEM.*

By ALBERT C. BUCKLEY, M.D.,

PHILADELPHIA, PA.

It is very clear that the nervous system is implicated to a serious extent in exophthalmic goiter. There is much evidence to show that the disease occurs in individuals who seem to be predisposed in that they are the possessors of inherently unstable nervous systems. Exophthalmic goiter and nervous diseases, including insanity, occur frequently in different members of the same family. F. H. Packard, analyzing a series of 82 cases of Graves's disease with mental disorder, found a neuropathic heredity marked in 63 per cent.

By far the majority of patients suffering from hyperthyroidism present mental symptoms in some degree. In fact, mental symptoms may be the earliest noted; that is, before the cardiac or ocular symptoms become manifest. The most common are an intense, indefinite agitation, with more or less mental and motor restlessness. The patient is unable to settle down to any occupation, and complains of being distressed by any sudden noise, or unexpected news, this being accompanied by a palpitation that may last

* Summary of article in the New York Medical Journal, Dec. 6, 1913.

for several hours. Other patients suffer with marked excitement, sleeplessness, hallucinations, incoherence, refusal of food, dirty habits, emaciation, diarrhea, and exhaustion, which may terminate fatally.

Some instances of recurrent insanity have been recorded in which the mental symptoms and the goiter appeared and disappeared simultaneously.

Mental symptoms, especially hallucinations, can be produced by the administration of thyroid extract to persons who are susceptible.

No one type of mental disorder can be said to be characteristic of hyperthyroidism, but in the cases of severe grade, agitated depression and confusion with hallucinations seem to be most frequent. One case reported by J. P. Grieves was of a severe form of mania which terminated fatally after six days of pyrexia. Three days before death the gland was so reduced in size that it could not be palpated.

An interesting phase of the subject is furnished in a patient under the author's observation:—

A young woman in whom the usual symptoms of hyperthyroidism had developed was operated upon for a partial removal of the thyroid gland with what was considered a remarkable recovery. *Four years after* the operation the patient heard of a friend who had undergone a similar operation and had suffered a return of the symptoms. Almost immediately she became depressed and worried lest she should experience a return of her trouble. There were no indications of a recurrence, but examination revealed a laceration of the cervix, which was repaired, and a displacement, for which a shortening of the round ligaments was done. No improvement followed the operation and the patient became discouraged, refused to see her friends, and dwelt almost continually on the one idea of the possible return of the goiter. After the extraction of an abscessed tooth she became acutely ill with fever and rapidly passed into a typhoid state which lasted about four weeks, during which time she lost about 30 pounds in weight. For a few days she was stuporous, with difficulty in speech and swallowing. She slowly became clearer mentally, but still showed decided mental confusion. About six weeks later the confusion disappeared, but she had not returned to her normal mental state, giving way to violent attacks of temper.

At the time of her admission to the hospital she presented a suggestion of exophthalmos and a fine, scarcely noticeable tremor of the extended fingers, which became more marked when she was much disturbed. There was also a fine tremor of the muscles about the mouth, likewise increased under emotion. The superficial and deep reflexes were all exaggerated. The heart showed some extension of percussion limits. The pulse rate was only 76 to 80 a minute, soft, but showed a quick rise under emotion.

At the time of report the patient was in a state of depression, with agitation only shown when she was addressed, when she usually burst into a flood of tears, and at times almost a frenzy of grief. She was apparently on the verge of an emotional outburst at all times. Occasionally she ex-

pressed indefinite fears of impending danger. She was well oriented, had no fixed ideas, and was not hallucinatory.

Whether the hyperthyroidism, shock, or infection, or all three factors, were responsible for the psychosis in this case, the essential factor lay in the predisposition in the form of a hypersensitive nervous mechanism.

The four principal theories offered in regard to the etiology of exophthalmic goiter, three of which refer to the nervous system, are as follows: 1. That it is a disease of the sympathetic nervous system. 2. That the seat of the disease is in the medulla oblongata. 3. That it is a neurosis. 4. That it is primarily a disease of the thyroid gland.

Horaud in 1910 found a distinct thickening of the trunk of the right cervical sympathetic, compared with the normal, in exophthalmic goiter, and the cells of the ganglion had to a great extent disappeared. A series of 37 cases with changes in the nervous system was collected by Klein. Fifteen of the cases showed lesions in the neighborhood of the floor of the fourth ventricle. In 4 there were hemorrhages in the nucleus of the vagus. Bruce reported a case of myxedema following Graves's disease with mental symptoms leading to death from cardiac syncope, in which there were found hemorrhages into the nuclei of both vagi.

While this frequency of lesions in the central nervous system is worthy of attention, it must not be forgotten that the occurrence of hemorrhage can be explained through the altered vascular condition. A case has been reported in which enlargement of the thyroid gland suddenly developed in a middle-aged woman with the physical signs and symptoms of hyperthyroidism, and at the same time paralysis of the third, fourth, and sixth cranial nerves. This would suggest a thyroid which had been secreting in excess for a time without producing symptoms severe enough to attract the attention of the patient; later, a sudden exacerbation made itself manifest, the paralysis being the result of a sudden vascular disturbance or the sudden overwhelming of the nervous centers by the obnoxious materials. Dinkler states that the number and the severity of the symptoms in exophthalmic goiter suggest an anatomic basis for the manifestations on the part of the nervous system, but that no constant lesions have as yet been described, the various nervous changes reported having been more of the nature of complications or incidents. In a series of experiments upon animals by Tedeschi, in which lesions were produced in the restiform bodies, distinct symptoms of Basedow's disease occurred. It was found possible to reproduce those symptoms, after they had diminished or disappeared, by inducing a condition of hyperthyroidism. In thyroidectomized animals lesions of the restiform bodies did not produce the symptoms.

On the whole, the question is still to be answered, whether the disease is primarily one of the thyroid gland or one of the nervous system. If the gland is the primary seat of the disorder, the nervous system suffers chiefly in the reaction. If the disorder is fundamentally one of the nervous system, the thyroid is apparently affected through its blood-supply, which has been altered through a disturbance of the vasomotor apparatus. No matter which

may be the original seat of disturbance there is doubtless established a vicious circle. The excessive secretion affects the nervous mechanism controlling the circulation in the organ, which in turn intensifies the state of hypersecretion. There seems to be an hyperthyroid potentiality which is present in certain individuals, coupled with a peculiar nervous instability, and this combination of predisposing factors is what presumably is needed for the establishment of the syndrome seen in hyperthyroidism.

Abstracts from Current Literature on the Internal Secretions

Glycosuria in Diseases of the Pituitary Gland.—The existence of a "pituitary diabetes" is now generally admitted. At present there are 3 theories which are held to account for the occurrence of diabetes in lesions of the hypophysis. In cases of pituitary tumor the glycosuria is supposed to be due to compression by the tumor of certain neighboring nerve centers, in particular the center in the fourth ventricle. The second assumes that in such cases there are always co-existing lesions in the pancreas. The third considers that the glandular lesion produces the glycosuria.

Glycosuria of pituitary origin may show itself in three ways: sometimes as a symptom occurring among well-known symptoms of pituitary disease, such as acromegaly or gigantism; sometimes in the midst of a general symptomatology pointing to a tumor of the pituitary, and sometimes, though rarely, as a premonitory symptom of pituitary disease that ultimately dominates the clinical picture.

Glycosuria occurring in the course of acromegaly is considered by Pierre Marie a frequent symptom; he places its occurrence as high as 50 per cent. Other writers have given a lower percentage, but it is now well recognized that glycosuria does often exist in these diseases. It must be remembered that acromegaly does occasionally occur in infancy, although it is usually latent at this age; in infancy the liability of glycosuria to be missed is great. Glycosuria is by no means a terminal symptom of acromegaly or gigantism; it may, on the contrary, show itself in the initial stages of the disease. Light is thrown upon the glycosuria of acromegaly by a consideration of the urinary changes that occur in Fröhlich's syndrome—adiposogenital dyscrasia, due to pituitary insufficency; in this disease the diabetes insipidus exists and glycosuria is not found.

Glycosuria occurring in pituitary tumors in the absence of such characteristic symptom groups as acromegaly and gigantism, is not common, although published statistics must be taken with some reserve, in that they do not as a rule discriminate between true pituitary new

growths and those that originated in the juxtapituitary region, nor between those that are associated with hypertrophy of the gland and those associated with atrophy.

Cases in which patients have died from what was apparently ordinary diabetes mellitus, and in whom disease of the pituitary gland was found after death, are still more rare, although such cases have been recorded.

As to the pathological anatomy of the pituitary lesions that have been associated with glycosuria, most of the new growths are glandular in type, and those formerly described as sarcomatous were probably in reality glandular. At the same time, the type of the tumor is of much less importance than information as to whether the disease results in increase or in diminution of the gland function.

Functional increase of pituitary activity is generally attained by the administration of pituitary extract, and, although in this line the results are somewhat discordant, the consensus of opinion is that such administration results in glycosuria. The quantities necessary to produce glycosuria vary, and the resulting glycosuria is extremely inconstant in its severity and its duration. In man, for instance, the amount that must be ingested before sugar appears in the urine varies from ½ to 2 entire glands of the ox, and when it does appear it is transitory. It only occurs with a diet rich in carbohydrate food; the writers consider it an alimentary glycosuria. All the facts so far available go to prove the existence of a glycosuria directly dependent on lesions of the pituitary associated with increased activity of the gland. Paul Sainton and Louis Rol (Gazette des Hôpitaux, September, 1913; Medical Chronicle, January, 1914).

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Diabetes Insipidus with Tuberculosis of the Pituitary Gland.—The author describes the case of a man aged 31 who had tuberculous periostitis at 9, and was operated on for tuberculous maxillary glands at 29. About four and a half months before his death he complained of anorexia, nausea, fever, and inability to do his work. Two months before his death the vision of his right eye failed completely in four days, beginning on the external side. At the same time the sight of his left eye began to fail, particularly on the external side. Six days later he was taken into hospital with faint perception of light in his left eye, blind in his right eye, very thirsty, and with occipital headache that prevented him from sleeping at night. The urine exceeded 6 liters a day, and the bowels acted regularly. The gait was normal. There was slight exophthalmos, which the patient said he had always had. He was very deaf in his left ear, less deaf in his right ear. The thyroid gland was not enlarged, and the heart, lungs, spleen, and sexual organs were normal. The blood count showed 80 per cent. of hemoglobin, 3,320,000 red cells, 12,500 whites, and a moderate lymphocytosis. The cutaneous tuberculin reaction was positive, the test for alimentary glycosuria negative.

The exophthalmos increased, the cheeks looked myxedematous, and ptosis of the right eyelid appeared. A month later a skiagram showed that the sella turcica was normal. The patient was delirious; 6 weeks after this he died comatose. At the autopsy the brain was found edematous; the pia contained numerous tubercles, especially at the base and along the Sylvian fissures. In front and at the sides of the sella turcica, and in the middle cerebral fossæ was a rounded mass of newly formed tissue, 5 cm. in diameter and 1.5 cm. thick in the middle. It was caseating, yellow-gray in color, and with an irregular surface; it raised up the dura mater and had eroded the bone a little. Its anterior part included and involved the hypophysis. Below the optic chiasm was a caseous node partly involving the optic nerves. The cecum and appendix were tuberculous, but the kidneys were sound both to the naked eye and microscope. It was found that the tuberculous mass had entirely destroyed and replaced the nervous and paranervous (posterior) parts of the gland, and had also invaded the anterosuperior and lateral parts of the glandular (anterior) lobe, leaving about four-fifths of it untouched. This uninjured part seemed unduly rich in fibrous tissue and in blood-vessels, but free from colloid secretion and from hemorrhages; the secreting cells here preserved their characteristic staining reactions, the eosinophile cells being increased in number. The invading tuberculous tissue was rich in giant cells; no traces of the nervous or paranervous lobes could be discovered. Numerous urinary analyses are detailed.

The author combats the generally accepted view that irritation of the paranervous lobe of the pituitary gland is the main or only cause of diabetes insipidus. Administration of extra quantities of sodium chloride to this patient showed that there was complete inability to secrete a concentrated urine, until toward the end when coma appeared; the specific gravity varies from 1004 to 1008, and the addition of sodium chloride to the diet augmented the quantity of urine passed from 5 to 10 liters, but did not increase its specific gravity. It is more reasonable to assume that the diabetes insipidus was due to irritation of the base of the brain, particularly of the region around the third ventricle, the corpora mamillaria, and the posterior perforated space. L. Borelli (Giornale della Reale Academia di Medicina, Turin, vol. lxxvi, 1913; Canada Lancet, March, 1914).

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A Revision of Hypotheses Regarding Endemic Goiter.—The alleged water-borne cause of this disease has attained especial prominence since H. Bircher related the distribution of the endemic malady in Switzerland to the occurrence of very definite geologic formations. E. Bircher extended the hypothesis with the contention that the etiologic agent is removed from the rock formations in the guise of a colloidal organic substance, by the waters flowing from them. To support this hypothesis, statistics of the incidence of goiter in relation to special types of water-

supplies were collected. Famous instances were cited, notably that of the village of Rupperswil, in which goiter was found to decrease after the introduction of a new water supply from a different (geological) source, and that of Asp, an isolated goiter region in the midst of a goiter-free district, where relief was similarly brought about. These and related observations appeared so convincing that the subsequent discussion largely revolved about other features. A further extensive study, however, carried out by Dieterle, Hirschfeld, and Klinger, in the same regions of Switzerland, which have been the sources of evidence for many years, has recently shown that when an accurate survey is made the distribution of endemic goiter proves to be entirely independent of rock, soil, or water-supply. Regions having geologically comparable water sources show a varying and variable incidence of goiter, and furthermore, certain sections of villages having entirely different water supplies may show a uniform frequency of the disease. The reputed improvements following a change of water supply are now charged to hygienic reforms rather than altered geologic factors. Geographic features, traffic, etc., appear to be of far greater importance in determining the seat of disease.

It is noteworthy that in affected districts certain families and houses exhibit repetition of the disease. There is some evidence to suggest the possibility of localized infection in the home for example. A hereditary relationship could not be demonstrated; for the fact that the children of goitrous parents are affected somewhat more frequently than others may be due to other simultaneously acting factors, such as frequency of contact, rather than the inheritance of disease. Females are everywhere more subject to endemic goiter than males, though the distinction does not appear clearly until after puberty is reached. It seems not unlikely that the presumably enhanced functional activity of the thyroid in the female renders the gland more susceptible to the noxious agent. Editorial (Journal of the American Medical Association, February 14, 1914).

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Progress in the Surgical Treatment of Exophthalmic Goiter.—Doubtless there is no exophthalmic goiter which is not accompanied by thymus disorder; probably this is a disease of the entire branchiogenous system, and accordingly also a multiglandular affection. In the majority of instances the thyroid is the chief organ diseased, but in another category of cases thyroid and thymus are equally and specifically affected. In thymus glands of this type changes similar to those in the thyroid can as a rule, be demonstrated. A species of "epithelialization" of the thymus can thus be spoken of. With such thymus glands there is extreme danger from a toxic action. In a third form of exophthalmic goiter the thymus is the chief organ diseased. This thymogenous type appears to be infrequent. That the thymus is involved in a given case of exophthalmic goiter can be determined with certainty only in a certain pro-

portion of instances; a broadening of the mediastinal shadow is rather frequently seen in the Röntgen picture. The symptom myasthenia also possesses some value in this connection.

The author calls attention to the increasing safety and benefit from operative treatment in Basedow's disease since adopting the practice of resecting the thymus along with the thyroid, or removing the entire thymus. The danger with thyroidectomy in exophthalmic goiter seems to be acute intoxication from the thymus, after the thyroid is gone. At Rehn's clinic there were 8 deaths from this cause alone in 130 operative cases up to 1911. Since then the thymus has been resected along with the thyroid, and there have been no deaths in the 200 cases. The capsule of the thymus is left, as its removal is liable to bring on serious hemorrhage. The operation is simple and easy but there must be a week or two of preparaton, psychic, dietetic and medicinal. Local anesthesia is used. Ice is applied to the goiter and heart. Klose (Berliner klinische Wochenschrift, January 5, 1914).

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Insanity and Amenorrhea.—A patient, when seen 21 years old, was anemic and constipated, and had suffered from melancholia for three years, during which time she had menstruated twice only, very scantily and with great pain. After more than twelve months of treatment, which included curetting, she was placed in an institution, where she spent a year. She was then found to be suffering from religious mania with amenorrhea, was occasionally vicious, and at such times refused food. It was decided to remove an ovary and to substitute for it a more normal organ taken from a sane person. A hysterectomy upon another patient provided the required material, which after removal was placed in Ringer's solution at blood heat. Four and a half hours later the abdomen of the insane woman was opened. Both ovaries were very small, hard, pale, and cirrhotic. The more abnormal of the two was removed, the broad ligament on that side split, and the new ovary, cut into three slices, was embedded in the nest thus provided. Recovery was uneventful, and twenty-four days after the operation a normal, painless, profuse menstruation took place. The mental condition improved rapidly, and in six months the patient was dismissed to her home. She was then menstruating regularly, had put on 6 pounds in weight, and was exceptionally bright and happy. She declared her intention of doing her utmost to repay her parents for the trouble and expense of her treatment; in a word, her insanity had entirely vanished. J. W. Dunbar Hooper (Australian Medical Journal, November, 1913).

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Protective Action of the Adrenal Glands.—Evidence goes to support strongly the view that the adrenal secretion can be brought into rapid and valuable action upon lines calculated to strengthen the individual against possible harm, and is similarly brought into play with the major forms of emotion. Its action consists of a shifting of the blood

from the visceral parts to the skeletal; an enhanced force of the heart beat; an immobilization of the viscera; and, in particular, an increase of sugar supply to those structures most needing it. The shifting of the blood favors the fuller action of the skeletal elements upon which repulse of injury depends; this is gained at the temporary sacrifice of the viscera, which are immobilized; the more powerful cardiac action is affected by the peculiar action of the adrenal secretion upon the coronary arteries, for these are the only vessels which dilate instead of contract with the action of adrenal. Lastly, the increased ability of the tissues to metabolize sugar increases their power, and in the skeletal tissues this is, again, just what is wanted. The whole gamut of changes afford the spectacle of a most intimate and closely organized arrangement for the rapid focusing of added power to those structures most valuable for the immediate end in view, namely, the protection of the individual. W. B. Cannon (American Journal of Physiology, xxxiii, 356, 1914).

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Experiments on the Pulmonary Circulation, Including the Action of Epinephrin.—The heart lung preparation obtained from the dog was used, and the heart volume recorded by a simple volume recorder already used by Starling and his pupils. The results obtained show that with a pressure of 80-100 mm. Hg. in the aorta the pressure in the pulmonary artery of the dog is 14 mm. Hg., while at the same time the pressure in the left auricle and in the vena cava inferior is about 7 cm. of *water*. On an average the pulmonary arterial pressure stands to the systemic arterial pressure as 1:6. In asphyxia the failing heart dilates, and the output of the left ventricle gradually diminishes, with a consequent fall in the aortic pressure. At the same time the pressure in the pulmonary artery, vena cava, and left auricle rises. When the right heart also fails the pressure in the pulmonary artery falls to that in the pulmonary vein and vena cava. Epinephrin causes diminished volume of the heart and raises the pressure in the pulmonary artery with a simultaneous fall of pressure in the left auricle. These effects on the pulmonary circulation must be due to a contraction of the lung vessels, since even in the isolated lung perfused with an artificial circulation, epinephrin produces a rise of pressure in the pulmonary artery. H. Fühner and E. H. Starling (Journal of Physiology, December, 1913).

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Thyroid Insufficiency, Nervous Conditions, and Spastic Constipation in Women.—Report of 9 cases of nervous disturbance accompanying hemorrhagic uterine affections, ascribed to defective functioning of the thyroid and treated with thyroid extract; likewise 8 cases of nervous disturbance accompanying retarded development of the internal genitals. The benefit from thyroid treatment was constant and so marked that it can be explained only on the assumption that the neuralgias, vague pains and fatigue were due to excessive irritability of the nerve terminals which had gradually developed under the influence of protracted auto-

intoxication from lack of thyroid function. Such autointoxication may be the direct result of the thyroid deficiency, or merely promoted and increased by it; in either event thyroid treatment has a distinct causal efficacy. For the detection of such thyroid insufficiency, the author suggests that a preliminary blood examination be made to determine if there is a significant relative neutrophile leucopenia with relative lymphocytosis. The action of iodothyrin in these cases is that of a regulator. Spastic constipation is to be considered the direct opposite of diarrheas observed in hyperthyroidism. Even when of years' standing, it is amenable to treatment. Sehrt (Münchener medizinische Wochenschrift, February 24, 1914).

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Fatal Illness in Infants and Children.—In 13 infants from 2 to 4 months old, nearly all found dead in bed, and all apparently well developed and nourished, the lungs in 8 instances showed marked congestion, bronchitis, and bronchopneumonia. This was associated in most cases with hyperplasia, general or partial, of the thymolymphatic system. The author believes that these cases of sudden death in infants may therefore be described as cases of fulminant bronchitis and bronchopneumonia, associated with status lymphaticus. The same pathologic grouping was found, in all cases examined, in a very unusual series of fulminant bronchopneumonia in boys from 10 to 16 years old. The fulminant nature of the illness in both groups may have been due in some way to the status lymphaticus, the signs of which were unequivocally present in both groups. There is some evidence that fulminant types of other bacterial infections—scarlet fever and diphtheria—are also accompanied by thymolymphatic hyperplasia or status lymphaticus. In the two groups of fulminant pneumonia, thyroid hyperplasia in a marked degree was present in every case examined (18). This condition of the thyroid seemed to have existed for some time before death. The regular association of thyroid hyperplasia with thymolymphatic hyperplasia may also be a mark of the same abnormal constitution of diathesis. McNeal (Edinburgh Medical Journal, January, 1914).

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Malignant Tumors of the Thyroid.—The author reports a study of 33 cases. Nine of the 16 patients with epitheliomas and 2 of the 5 with sarcomas were males. The youngest patient was a boy of 13. No clinical distinction could be made between carcinoma and sarcoma of the thyroid, neither age of the patients, gross appearance of the tumors, nor the route followed by metastases furnishing any differential information. According to Askanazy, this similarity arises from the fact that both classes of tumors evolve metastases through the blood-stream whenever one of the ductless glands is involved, cancers of these being in close relation to the blood-vessels, whereas cancers of other glands give off their constituent cells into the lymphatics. Thyroid cancers and sarcomata at first develop slowly, a year or two elapsing before symptoms appear; then

there occurs sudden marked extension, with disturbances of speech, deglutition, and circulation, and rapid cachexia. Metastases in various organs are frequent; in but 1 of the author's cases were there metastases in the bones. In the 4 cases of pavement-celled carcinoma, supposed clinically to be primary growths, necropsy revealed a primary focus elsewhere. Xenia Wissmer-Kowarsky (Revue médicale de la Suisse Romande, January, 1914). * * *

Thyroid Treatment of Uterine Hemorrhage.—Attention called to the close connection between the hypophysis, thyroid, and genital organs. The connection between the thyroid and the ovaries seems to be particularly close, and the thyroid may be responsible for conditions in the ovaries which entail bleeding in the uterus. The characteristic behavior of the blood when the thyroid is functioning to excess or not enough may account for this. With hyperfunction, the blood is abnormally slow in coagulating; with deficient functioning it coagulates abnormally quickly. The author found in 55 cases of uterine hemorrhage without discoverable local cause that 38 of the patients had all the signs of pronounced hypofunction of the thyroid. On this basis he gave thyroid treatment and in every case marked benefit was apparent. Not only the hemorrhages, but the general health showed a decided change for the better. Complaints such as palpitation of the heart, headache, etc., were occasionally improved after the first few doses. Leucopenia disappears after a few weeks of medication. Hemorrhages cease or become normal even after medication has been discontinued, thus proving the causal relations of thyroid insufficiency and hemorrhagic metropathies. E. Sehrt (Münchener medizinische Wochenscrift, February 10, 1914).

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Observations on the Effects of Epinephrin.—The author believes that epinephrin, while often restoring a pulse previously too feeble to be detected, does so at the expense of injury to the heart. His observations were made on healthy normal adults and on several patients apparently needing the drug, which was given subcutaneously in doses of 3 to 5 minims of the usual 1 : 1000 solution. The observations were controlled by injections of similar amounts of normal saline solution. In 7 normal persons subjective symptoms noted after the epinephrin were so marked, that not 1 patient was willing to undergo any more observations. The symptoms complained of were chiefly breathlessness and a sensation of cold. The former was often extremely distressing, the latter so intense in 1 patient as to lead to a severe rigor. In normal persons, as well as in patients, there was usually blanching of the skin. Blood-pressure rose from 15 to 45 mm. in normal persons; the pulse rate from 15 to 52 beats per minute. The symptoms usually passed off within a comparatively short time. Malcolm Donaldson (British Medical Journal, February 28, 1914).

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Lack or Excess of Iodine as Factor in Thyroid Disease.—Myxedema, according to the author, is due to a lack of metabolized iodine, while

exophthalmic goiter is the result of an excess of non-metabolized iodine. The primary cause of myxedema is thus a deficiency of iodine in the food, while that of exophthalmic goiter is a functionally weak thyroid with a sufficiency or an excess of iodine in the food. Experience has already shown that cretinism, myxedema, and endemic goiter are favorably influenced by organic thyroid iodine or thyroid extract. On the other hand, iodine in any form, or food containing it is distinctly harmful in exophthalmic goiter, and also in ordinary goiter, not of the endemic type, but that which is often a preliminary phase of exophthalmic goiter. Endemic goiter can thus be effectively treated with iodine, but iodine is strictly contraindicated in the sporadic form occurring away from the mountains. Grumme (Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, xxvii, Nu. 14; Journal of the American Medical Association, May 23, 1914).

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Epinephrin Content of Adrenals after Various Anesthetics.—Report of experiments on dogs to determine the effect of ether and chloroform anesthesia on the epinephrin contents of the adrenals. The decrease after chloroform proved to be much greater than that after ether, and persisted for a long time, while after ether the adrenals became normal again in ten to twelve hours. When morphine was given before the chloroform, it seemed to delay the bad effects on the adrenals, but only so long as the morphine influence continued. After that the epinephrin contents was persistently lowered, as in the cases where morphine was not given. Morphine given before ether did not seem to make any special difference in the effect of the anesthetic. Thus, chloroform, is much the more toxic than ether in that it inhibits the tonic effect of epinephrin on the sympathetic nervous system. Delbet believes that most of the serious after-effects of chloroform anesthesia can be prevented by giving epinephrin. Oliva (Lyon chirurgical, January, 1914).

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The Stomach in Exophthalmic Goiter.—In a research of 24 patients with exophthalmic goiter, the author found achylia constant in all instances of the pronounced classic type of the disease. The achylia was marked from the very beginning of the disease. When even one of the classic triad of symptoms was lacking, however, the secretion of hydrochloric acid did not seem to be modified. The triad of symptoms was presented by 17 cases and achylia was the rule in this group. Wolpe ascribes it to the toxic action of the Basedow poison on the nerves of the stomach, but the author thinks the evidence speaks as much for a chronic gastritis as for a nervous achylia. In a recent case, a young woman entered the hospital for digestive disturbances, vomiting, achylia, and diarrhea. There were no signs of exophthalmic goiter, but during the month she was in the hospital exophthalmic goiter developed, gradually progressing since. Her stomach had given her trouble for five or six years. V. F. Moller (Hospitalstidende, January 28, 1914).

Thyroid Grafting.—Thyroid tissue appears to be particularly fitted for grafting. It frequently lives, grows, and functionates, and this method of treating myxedema and cachexia strumipriva is not to be overlooked. No benefit has been known to result from thyroid grafts, however, in tetany or cretinism. The author was unable to find in all the literature even 1 case in which the remote results were favorable enough to justify the assumption of any real efficacy from the thyroid-grafting operation. He reports the case of a woman who had a tumor develop in the thyroid region years after removal of a parenchymatous goiter. It was removed at the sixth year. Again a tumor developed in the region, this time in the scar and this tumor was removed eight years after the second. Each of the tumors had all the characteristics of thyroid tissue, and the author believes that each developed from a scrap of thyroid engrafted during the preceding operation. Paschoud (Lyon chirurgical, December, 1913).

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Pituitary Extract in Obstetrics.—Where the cervix is not over four fingers dilated, the author gives only 0.05 Gm. of pituitrin. He never uses more than 0.1 Gm. as an initial dose. If 0.2 or 0.4 Gm. be given and an extremely violent labor result, it is almost impossible to control the pains, even with chloroform. With cautious dosage the author has had no instances in which pituitrin brought about contractions of the uterus so powerful as to interfere with the placental circulation and cause deep asphyxiation of the child. In the induction of labor large doses—0.1 to 0.2 Gm.—may be given with perfect safety. It would seem that so much of the energy of the drug is used up in starting the labor that the pains induced are never very strong at the outset, the effect wearing off before stronger pains develop. Lindeman (American Journal of Obstetrics, February, 1914).

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Intravenous Injections of Hypophyseal Extract in the Treatment of Post-partum Hemorrhage.—A distinction is to be made between atony and hypotony of the uterus, the latter being a condition in which the organ can still react to stimulation. In such instances post-partum hemorrhage largely loses its seriousness on account of the ready reponse to intravenous injection of hypophyseal extract. The author reports 3 cases in which the hemorrhage was thus controlled and a permanent contraction of the uterus obtained. From 0.5 to 1 c.c. of hypophysin was used. The injection should be comparatively slow, occupying not less than half a minute, otherwise the patient may collapse, with slow, shallow breathing, and a small running pulse. This, however, does not appear to be serious, recovery occurring a few seconds later. Kreiss (Zentralblatt für Gynäkologie, January, 1914).

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Parathyroid Insufficiency and Thyroid Transplantation.—The thyroid and parathyroids are in chemical and physiological relation to each

other. In tetany the administration of calcium is less satisfactory than transplantation of the parathyroid bodies, while transplantation of the thyroid alone is superior in effect to either. In each of 2 cases of tetany the thyroid gland of a patient with Basedow's disease was transplanted into the abdominal tissues. This thyroid was removed without any part of the parathyroids. From the results obtained the author concludes that the chronic symptoms of parathyroid insufficiency are improved or disappear, at least in many cases, through the administration or transplantation of thyroid. Poggio (Rivista critica di clinica medica, December 6, 1913).

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Acromegaly Following Panhysterectomy.—At the age of 39, a woman had been operated for uterine fibromyosa and a tumor of the adnexa, both the latter and the uterus being removed. The menses accordingly ceased. About a year after the operation the hands and feet began to grow larger, the face broadened, the lower jaw became markedly prominent, and the body weight showed a considerable increase. There were no serious cerebral symptoms or visual disturbances. The development of acromegaly in this case was probably related to the cessation of the reproductive functions. K. Goldstein (Münchener medizinische Wochenschrift, April 8, 1913).

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Successful Epinephrin Treatment in Osteomalacia.—Report of a case of recurring osteomalacia noteworthy because of the continuation of the disease in spite of castration 11 years before, and the energetic and prompt healing action of epinephrin. After 2 injection series of 9 injections each, —0.5 c.c. at a time—the symptoms disappeared and the patient was able to resume his duties. The improvement had continued several months after the treatment ceased. Salis (Münchener medizinische Wochenschrift, November 18, 1913).

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Sensitiveness to Epinephrin in Dementia Precox.—Cases of dementia precox, especially the catatonic and hebephrenic forms, are not sensitive to injections of epinephrin, *i.e.*, the blood-pressure does not seem to be affected. Normal individuals, as well as those affected with other psychoses, react to the subcutaneous administration of epinephrin by a marked increase in blood-pressure. W. Schmidt (Münchener medizinische Wochenschrift, February 17, 1914).

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Comparative Action of Epinephrin and Histamine on the Heart and Blood-vessels.—Report of a comparative study of the action of epinephrin and histamine (betaimidazolylethylamine) on the heart and blood-vessels of fish and rabbits. It was found that the action of histamine is similar to that of epinephrine, except that the latter dilates the blood-vessels of the lungs, while the former contracts them. W. I. Berezin (Roussky Vratch, November 2, 1913).

Department on General Medicine

Original Article

THE TREATMENTS OF CROUPOUS OR LOBAR PNEUMONIA, IN PARTICULAR THAT INCLUDING A MILK DIET.*

By LOUIS KOLIPINSKI, M.D.,

WASHINGTON, D. C.

"Concurritur: horae
"Momento cita mors venit aut victoria laeta."—*Horace.*

THERE are six or more treatments for croupous or lobar pneumonia,—some old, some current, one a treatment of the future, and one new. The course of this murderous disease is so rapid that the outcome or end is manifest in a week. It is therefore the duty of the conscientious practitioner to visit the patient at least twice a day, to be active in his medication, and to have a trusty nurse or attendant constantly at the bedside. There is reason to believe that patients in pneumonia have sometimes starved to death.[1]

The several treatments above referred to may be described as follows: I. The future treatment, yet undiscovered, is that of an *antipneumonic serum* (antitoxin) or *vaccine.* With such an agent a lung inflammation will either be prevented or cut short in a day, and the patient recover from illness as quickly as after the antitoxin treatment of diphtheria.

II. The *expectant* treatment, without medicaments, based upon the knowledge or assumption that pneumonia is a brief disease, harmless to those of robust vitality and those neither too young nor too old to throw off the malady unaided. This method is mentioned by all writers on treatment. Here and there it is not favored or stated with approbation. Osler speaks of the appalling mortality of pneumonia, and Tyson calls it treacherous and uncertain at any age.

III. The old treatment of *blood letting,* with its accessories or substitutes of the *depressant* class. This is the antiphlogistic treatment of inflammation and fever. Wood's practice gives a clear and precise description of the method, once thought indispensable. He states that in the young and healthy recovery ensues under proper or unproper remedies or without any. Apparently salutary and essential measures are injurious and even fatal under some circumstances. In common pneumonia in vigorous sub-

* Read at a meeting of the Therapeutic Society of Washington, D. C., October 3, 1914.

[1] Dr. George B. Wood: A Treatise on the Practice of Medicine, 5th edition, 1858.

jects, the most efficient remedy is bleeding; 16 to 30 ounces. This is to be repeated when indicated. Purgatives are then necessary,—and likewise tartar emetic in small doses. Opium, ipecacuanha, and calomel, several times daily doses in pill form, are beneficial. Cups and leeches to the chest may follow or replace the venesections. A large emollient cataplasm may be needed, but renders the patient liable to take cold. Finally, if the disease proves obstinate, it is proper to resort to the mercurial impression till the gums are somewhat affected. Whilst the mercury is given, a blister 6 x 8 or 8 x 10 inches in size is to be applied to the chest. Expectorants are useful in the declining stage. For failing strength, ammonium carbonate and oil of turpentine in rather large doses are useful. In drunkards the accustomed amount of alcoholic stimulants is diminished. The best plan is to allow the stimulus and at the same time to bleed. There is little hope of cutting short the disease by depletion (bleeding) after four or five days. In the old and feeble, and in children, bleeding is not useful; for children leeching, for the old and feeble, cupping and leeching, are indicated.

The treatment of Rasori by tartar emetic was practised either with or without bleeding. A safe plan of employing this otherwise dangerous method was to give only ¼ grain to 2 grains (0.015 to 0.12 Gm.) of the drug every two to four fours. It required frequent visits to detect the proper moment at which to suspend the treatment, as serious and sudden exhaustion from vomiting and purging was liable to occur. Wood declared the tartar emetic treatment to be less manageable than the lancet, and less safe than the mercurial plan.

Among other remedies noted were veratrum viride, used in the United States with much success in miasmatic regions,—also lead acetate, hydrocyanic acid, digitalis, ammonium chloride; alkalies and emetics in the early stage, potassium iodide in the late. Chloroform inhalations, 60 drops every two or four hours, but not enough to produce unconsciousness, were advised.

The dietary at first consisted of mucilaginous and farinaceous decoctions and of dried fruits, together with orange and grape juices. More advanced cases were given tea, toasted bread, crackers, rice, Indian mush and after these, milk. In convalescence and earlier in cases with debility, broths, lighter meats, eggs, oysters, etc., were allowed.

Bleeding and its powerful adjuncts were given up, however, at about the end of Wood's time, after the good results and lessened mortality when such treatment was not practised had been noticed. J. Hughes Bennett did much in achieving this reform in English and American practice. In his work "The Restorative Treatment of Pneumonia," 3d edition, 1866, he condemned blood letting and the antiphlogistic treatment then in vogue. The conviction that removal of exudate was dependent upon vital processes of growth led him to an opposite method of treatment, viz., never to attempt to cut the disease short or to weaken the pulse and vital powers, but on the contrary to further the necessary changes which the exudate must undergo in order to be fully excreted from the economy. To this end, during the period of febrile excitement he contented himself with giving salines in

small doses with a view to diminishing the viscosity of the blood. At the commencement of the treatment he ordered as much beef tea, milk, and other nutrients as could be taken, and, as soon as the pulse became soft, solid food and from 4 to 8 ounces of wine daily. As the period of crisis approached he gave a diuretic containing 30 minims (2 c.c.) spirit of nitrous ether and sometimes 10 minims (0.6 c.c.) of colchicum wine three times daily, to favor excretion of urates. If crisis occurred by sweat or stool he took care not to check it in any way. He did not consider that the salines and diuretics did more than to assist the natural progress of the disease. The essential part of the treatment consisted in the rest, nourishment and support given to the body throughout.

In our time there remains of the heroic antiphlogistic system venesection, done once in a practitioner's life, opium, and morphine.

IV. A more modern treatment is that of *hydrotherapy,* consisting of the use of the cold or tepid bath, a cold wet compress and pack, and the ice bag. Any physician who has worked against pneumonia with this method will have been impressed by its efficiency in ameliorating the acutest and most urgent symptoms and often in bringing about a quick cure in the presence of a condition of alarming gravity. Its most brilliant effects are seen in infants and children.

An offshoot of hydrotherapy is the *open air* exposure of the pneumonic patient at a temperature lower than that found in the bed-chamber, as in tuberculosis. One assumes that the open air is of greater purity than that of a habitation. Another beneficial influence is exerted from the fact that cold air, like cold water, abstracts heat from the body and reduces febrile temperature.

The effects of cold air—aërotherapy—are very satisfactory, but neither this treatment nor hydrotherapy can become permanently established as the best. As is the case with the cold bath treatment of typhoid fever, hydrotherapy and aërotherapy in pneumonia are not suitable for private practice, and should not be applied where the practitioner has at his command another treatment of equal or superior merit. The susceptibilities of human beings in connubial and family relationships cannot be violated by the infliction of pain, real or fancied. Hence, hydrotherapy, like aërotherapy, is not suitable as a routine procedure, and is in favor chiefly in hospitals. Of the open air treatment G. W. Norris[2] states that the results are excellent, but that it is necessary to educate an unwilling public if the treatment is to be actually carried out.

V. The *specific* treatment with drugs includes the administration of quinine in large doses, of digitalis in like quantity, and of potassium iodide. The iodide treatment is indispensable in every pneumonic case with secondary, tertiary, or hereditary syphilis. Creosote, and bichloride of mercury and sulphur are other agents of this class. With quinine and digitalis the writer has had no experience; the other remedies he considers of value.

[2] G. W. Norris: "Croupous Pneumonia," in Osler's Modern Medicine, 1913, 2d ed., vol. i.

VI. The *symptomatic* treatment is that which is chiefly in use. Of the drugs which mainly constitute it, almost all have had both advocates and opponents. The former have favored their use as necessary and helpful, the latter combated it as unnecessary, harmful or dangerous to life.

For pleuritic pain, an ice-bag, a warm compress, a flaxseed meal poultice, mustard to the side, dry cups, leeches, wet cups in the strong, and a hypodermic injection of morphine are recommended. Other measures advocated are: quinine, digitalis, antipyrin, acetanilide, acetphenetidin, expectorants, ipecacuanha, senega, apomorphine, and the free use of fluids.

For heart weakness, an ice-bag, digitalis, strophanthus, caffeine; injections of camphor in oil and ether, and likewise of strychnine; nitrites, and nitroglycerin are frequently ordered. In drunkards, alcohol is given; in delirium tremens, tepid baths, cold water to the head, strychnine hypodermically, morphine likewise, paraldehyde and chloral hydrate in small dosage.

In the presence of cough, codeine, or morphine in small doses, as well as alkalies, are used. Dyspnea from weak heart is relieved by bleeding, strychnine, digitalis, and inhalation of ethyl iodide or oxygen. The latter may be inhaled also for venous congestion and sleeplessness. By some, to be sure, oxygen is held to be worthless, and by still others, harmful. For sleeplessness with cough, Dover's powder is considered appropriate.

Laxatives are useful, and likewise diuretics. The best diuretic, according to Norris, is water, 4 to 8 ounces (120 to 240 c.c.) of which are to be given hourly. Toxemia is combated by hydro- and aëro- therapy, substantial feeding and moderate stimulation, enteroclysis, venesection, and intravenous injection of saline solution.

According to this writer, alcohol is contraindicated in pneumonia because it lessens the opsonic power of the blood, diminishes glycogen in the liver, lowers blood-pressure, causes venous congestion, and decreases the work of the heart; it acts as a transient stimulant, then as a depressant. In drunkards, immediate withdrawal is advised. Death where the heart is healthy is due to vasomotor paralysis and great dilatation of the splanchnic vessels. There is a fall of blood-pressure, cold sweating, tympanites, delirium, and arrhythmia. Here, says Norris, the proper treatment is fresh air, cold sponging, mustard foot bath, saline transfusion, and epinephrin intravenously; strychnine, atropine, and caffeine are also considered useful. Digitalis is indicated only in cardiac dilatation, and the nitrites are contraindicated. Where there is heart weakness there result cyanosis, venous distention, rapid pulse, enlargement of the heart to right, a weak second pulmonic sound, and a muffling of the first heart sound. The liver and kidneys becoming congested and the lungs edematous, then, still quoting Norris, we should bleed,—8 to 24 ounces; digitalis and strophanthus must be used by vein and through the skin, but not too late. The calcium salts, according to Brunton, act directly as a stimulant to the heart. They also neutralize the toxins of albumose and peptone nature and counterbalance the sodium chloride retention in the economy found in this disease. The application of a flaxseed meal poultice to the chest in pneumonias is a domestic treatment that has

never been in favor in textbooks. Sir William Osler alone says that in the pain of pleuropneumonia in children, hot poultices are preferable to other methods of treatment.

VII. The treatment with a pure *milk diet.* In examining a number of medical works of various dates it was noted that the dietetic treatment of croupous pneumonia has been neither cultivated nor systematized. Every second or third writer declares milk to be the best food, but does not describe its proper use, and invariably there are added other articles of diet that are objectionable or harmful.

The best and only diet in pneumonia, in my estimation, is milk given in a regulated manner. The results of using it have been so good that I consider the milk treatment of croupous pneumonia as useful and as necessary as it is in typhoid fever. With a pure milk diet properly given in this affection the diseased organism is aided in the following ways: The cough tends to become moist, the respirations deeper and less frequent. The heart contractions are strengthened, the pulse becoming fuller and slower. The febrile temperature is reduced 1 or 2 degrees. The bowels are often regulated. Sleep and nightly quiet replace sleeplessness, restlessness, and delirium. Diuresis is markedly increased. The color of the urine is lightened and its urates lessened, and it does not grow turbid on cooling. Toxemia, the chief peril to life according to some, is most rationally and expeditiously combated. Hence it may be held that a complete milk diet is the basis of any treatment for croupous pneumonia; that all other foods are unnecessary, and that water drinking or water introduced into the circulation in any other manner is needless.

The success of the milk diet depends, in the first place, on the daily quantity taken. The amount must be a standard or measure for the individual. This, for the adult, is from 4 to 6 quarts. With less than 4 quarts results are not apparent, for to replace or displace the whole blood volume in a human subject requires the daily absorption of the quantity of milk mentioned. A half-pint should be given every hour, or 1 pint every two or three hours. It must be given at night. It should be taken quickly, not sipped. Sipping milk is laborious, and where there is any dyspnea it can be observed that the shortness of breath is greater thereafter.

While the use of a milk diet in disease may be of a simplicity surpassed only in the case of absolute fasting, it may, on the other hand, fail through any one of many practical difficulties or objections.

In medical practice mankind can be divided into two classes: First, that of milk drinkers, who take milk readily in any amount,—and this is true of all periods of adult life. This class is easier to cure in any form of disease than the second, which holds milk drinking in aversion. Here one encounters volleys of objections from both sexes: It is not liked, it cannot be taken, too much was given in some previous illness, it causes biliousness, it constipates, it causes vomiting, it causes diarrhea, all city milk is unclean, the milk on a farm is the only kind to drink, death is preferable, and the like objections, complaints, and opposition, with or without rational cause

or defense. In this class of people the milk diet is mostly unsuccessful and even where the medical attendance has been good, where milk finally has been unwillingly and ungraciously taken by the patient, and where the outcome is a prompt and complete cure, gratitude is never in such a case a part of the practitioner's reward.

In some instances the pure milk diet must be altered by dilution of the milk with barley or rice water. A thick gelatinous liquid is prepared by boiling and stirring for ten or fifteen minutes 1 or 2 teaspoonfuls of barley or rice flour in a pint of water. To this, 1 or 2 volumes of scalded milk are added. Eight to 12 pints is the daily quantity required.

Cows' milk cannot be administered to every pneumonic, however willing he may be to make the attempt. Cows' milk may induce the tympanites so prone to ensue in a grave case, and frequent enough in fatal ones. Where, in the course of milk diet treatment, this complication appears and it cannot be overcome in a few hours by castor oil or by oil of turpentine enemata, barley or rice water must be given instead. Cows' milk in some subjects produces very active purgation, so marked that at the first complaint of this by the patient, the same change in the feeding is necessary. Where, in a case placed upon a milk diet, there is heart palpitation, gastric pain and distress, restlessness, and much belching of gas, the condition is a nervous dyspepsia or indigestion from enfeebled circulation due to more or less obvious organic heart weakness, and the immediate replacement of pure milk with that diluted as already described is necessary.

In rare but undoubted cases, milk causes vomiting, either as soon as taken or else after longer intervals, once or twice a day, in large amounts, consisting of liquid or coagula, or both. The first accident is an idiosyncrasy, the other evidence of an overloaded, distended stomach,—one not digesting. Either occurrence necessitates the stopping of this food. If, with a reckless or inexperienced hand, the pure milk is continued in the second instance, acute gastric dilatation may occur—an accident either very grave or fatal.

The treatment of pneumonia with a pure milk diet is not new as regards the food selected, but the above presentation is new in that there are stated the principles of its use, its effects on the disease, the essential daily amount, the objections to it, its occasional dangers, its proper administration at the bedside, and its permanent necessity whatever other treatment may be used or added. The whole subject has been offered and considered in atonement for the startling, chilling words of an old master in therapeutics in the first paragraph of this paper.

Cyclopedia of Current General Literature

Accessory Sinus Suppuration, Vaccine Treatment in.—Within the last few months the author has instituted treatment of sinus suppuration with stock vaccines. The number of cases treated was 20, grouped as follows: Frontal, acute, 3; chronic, 4, ethmoidal, chronic, 8; maxillary, acute, 3; chronic, 2. The number of injections varied from 2 to 12. The initial quantity began at ½ c.c., and at fourth injection the amount was 1 c.c. A Sherman vaccine of the following composition was invariably used: Friedländer bacillus 300,000,000; micrococcus catarrhalis, 200,000,000; streptococcus, 60,000,000; pneumococcus, 80,000,000; staphylococcus aureus and albus, of each, 200,000,000. In the acute cases 2 or 3 injections suffices, while the chronic cases always went to the full number.

The results within two days were often so good as to delude one with false hopes. The local reaction where the injection was made was always marked from the first application, appearing as a greater or lesser soreness and stiffness in that portion of the arm or leg. Subsequent injections provoked this reaction less and less. The sinus condition was usually better, although in the chronic cases the discharge was often worse and occasionally unaffected. The 2 or 3 subsequent injections seemed to bring continual improvement, and while this was real in the acute cases, in the chronic it was ofttimes but apparent. Up to the time of writing none of the chronic cases had been absolutely cured, though many showed great improvement.

The end results were as follows: Frontal sinus: Cured, 3; benefited, 2; not improved, 2. Maxillary sinus: cured 2; benefited (acute), 1; (chronic), 2. Ethmoid cells: cured, 1; benefited, 3; not improved, 4. Total cured, 6; benefited, 8; not improved, 6. Percentages of cures in acute cases, 5 out of 6, or 86 per cent. Percentage of cures in chronic cases, 1 out of 14, or 7 per cent. Percentage benefited in chronic cases, 8 out of 20, or 40 per cent. Percentage of absolute failures in chronic cases, 6 out of 20, or 30 per cent.

Conclusions.—The treatment is of great value in acute cases which are slow in healing and tend to become chronic. It should be a routine procedure in all chronic conditions that show a tendency to be of the latent type. It should be instituted after radical operations. It offers the most hope in old operated cases which have not been entirely cured or have become reinfected. Ross Hall Skillern (Laryngoscope, July, 1914).

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Bronchitis, Treatment of Recurrent Sibilant.—Recurrent rhinitis and recurrent sibilant bronchitis, which are sometimes associated with rather severe asthmatic attacks and almost always with a severe paroxysmal cough, are very commonly caused by some kind of food intoxication. They may be in most instances almost or quite relieved by dietetic treatment. This symptom group occurs not infrequently in children who have a pre-

disposition to migraine, recurrent vomiting, and urticaria.

Dietetic Treatment of the Attack.—During the attack sweets, butter fats, eggs and raw fruits are especially to be avoided. Strawberries, rhubarb, tomatoes, salads, shell-fish, tea, coffee, pastry, gravies, cream, codliver oil and alcohol are to be excluded from the diet. If it be necessary to sweeten the cereals and cooked fruits which the child eats, saccharin is to be used instead of sugar, and while the patient is not to have butter, skimmed milk may be allowed. Eggs in every form, even in cooked foods, are to be carefully eliminated from the diet, and among the raw fruits oranges are to be especially avoided.

The following foods may be allowed: Beef, mutton, fowl, and fish in moderation, cereals, bread, all vegetables not above proscribed, cooked fruits, skimmed milk and thick soups.

Interval Dietetic Treatment.—About two months after the patient has recovered from the attack the above diet may be carefully modified by adding one egg a day; then, perhaps two weeks later, milk containing 4 per cent. fat may be substituted for skimmed milk. Some few weeks later, all raw fruits, oranges excepted, may be added to the diet. Some weeks later, small quantities of sugar may be used for sweetening cereals and stewed fruits. After five or six months the child may return to his original diet with the exception that he must eat sparingly of sweets and must eat nothing between meals. If the symptom group returns on the addition of any article of diet that particular food is to be permanently excluded from the diet.

Hygienic Treatment.—During the attack the patient is to have all the outdoor air he can get with as little exercise as possible; this can be obtained on sleeping porches and with wide-open windows. As he recovers from the attack, exercise in the open air is advisable. School children should have all the air possible at night.

Medical Treatment of the Attack.—During the attack, constipation should be relieved by milk of magnesia or calcined magnesia. Magnesium sulphate may be used in small doses in older children. Alkalies in the form of sodium bicarbonate, potassium bicarbonate, or potassium citrate should be given in fair sized doses three or four times a day. Sodium bicarbonate, *e.g.,* may be given in 5-grain (0.3 Gm.) capsules three or four times a day, or the same size dose of potassium citrate may be given in solution. In younger children who object to the taste of sodium bicarbonate, the author commonly directs the mother to distribute through the child's food a teaspoonful of this salt each day. Tincture of belladonna should be given for a short time in 2- to 4- minim (0.12 to 0.25 c.c.) doses three times a day.

Interval Medical Treatment.—If constipation cannot be controlled by diet, cascara or other palatable laxative should be used as indicated. The belladonna should be discontinued, but sodium bicarbonate should be given for six to eight weeks in moderate doses once or twice a day.

The above treatment, if faithfully carried out, will in almost every instance control the syndromes above described. This treatment is almost or quite as effective in the treatment

of migraine and recurrent vomiting in children. In the adult and older child, the author uses the following formula:—

℞ Sodii sulphatis (dry) gr. xxx (2 Gm.).
Sodii salicylatis, gr x (0.6 Gm.).
Magnesii sulphatis, gr. j (3.3 Gm.).
Lithia benzoatis, gr. v (0.3 Gm.).
Tinct. nucis vomicæ, gtt. iij.
Aquæ destillatæ, q. s. ad f℥iv (160 c.c.).

The solution is put up in siphons and charged with carbonic acid, and the patient is directed to take, half an hour before breakfast, a sufficient quantity to produce at least one bowel movement during the morning. This prescription is of great value in the preventive treatment of migraine. B. K. Rachford (Archives of Pediatrics, July, 1914).

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Cancer of the Esophagus, Early Symptomatology of.—It is usually considered that dysphagia is the earliest symptom in this condition. Such is often the case, but it is not generally appreciated that the dysphagia may be at first only temporary. The dysphagia may entirely disappear for a considerable length of time before it becomes permanent. In 4 of Cabot's 20 cases there was no dysphagia without the disease. In some patients the dysphagia at first may amount to a brief choking sensation only. It is not always the first symptom. Instead of it there may be some definite new abnormal sensations referable to the throat and interior of the thorax or region beneath the xiphoid cartilage. One patient referred to the author had complained of a sticking sensation in the throat and supposed that she had swallowed a tooth-brush bristle. Upon being assured that there was nothing the matter, the patient returned after four months, with increased trouble. In other patients the new abnormal sensation may be described as a sense of pressure, or a dull, constantly recurring discomfort, or in still others, an actual pain. Patients complaining of such symptoms, which are possibly referable to the esophagus or stomach, should not be discharged as neurasthenics, but urged to have an esophagoscopic examination. In some patients the first symptom was cough, an increase in the amount of mucus in the throat, or anorexia.

A review of the author's data makes it clear that an earlier diagnosis was easily possible in all the patients. In a small minority only was the diagnosis made before three to four months after the patient had symptoms. When one considers that the total duration of cancer of the esophagus is probably about two years, a delay of three or four months is of considerable proportion. H. H. Janeway (American Journal of the Medical Sciences, April, 1914).

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Cerebral Hemorrhage, Diagnosis of.—Marked hyperemia and a tendency to congestive seborrhea on the side of the face and scalp corresponding to the developing hemorrhage in the brain were detected by the author. The hair on that side also stands up, and it is impossible to make it lie smooth. The hyperemia in one side of the face may pass into pallor and a distressed expression, and there may be sensations of cardiac oppression. These findings may persist for hours before there are other signs of the hemorrhage. The spastic contraction of the muscles causing the

hair to "stand up on end" is a grave sign; the author found it only in the cases which had an unfavorable outcome. It sometimes preceded the cerebral hemorrhage by several hours. It is possible, he suggests, that prompt and copious venesection might ward off the cerebral hemorrhage at the time of this spastic contracture. Mendl (Münchener medizinische Wochenschrift, April 7, 1914).

* * *

Common Colds, Treatment of.— Rhinitis is divided by the author, for purposes of treatment, into 3 stages: 1. Dryness or pricking of nose and throat accompanied by chilliness. The mucosæ are quite hyperemic, dry, and free from secretions. Headache, with fullness between the eyes. The temperature ranges from 99° to 104° F. *Treatment:* Hot baths, purges (calomel and salts; salts especially to deplete the system of water); rest in bed; ice-bag to forehead; hot-water bag to feet; internally 10 grains of Dover's powder and hot lemonade to promote sweating; in the nose, locally, epinephrin, 1:5000.

2. Profuse watery discharge; throat sore; headache less. If nose is wide, fullness between eyes diminishes, or if narrow, fullness increases. *Treatment:* Atropine internally until dryness of nose and throat develops; hot alkaline nasal douches; cocaine hydrochloride daily, 1 per cent. solution applied (never prescribing cocaine for patients to use at home, and when using it, always having aromatic spirit of ammonia handy).

3. Mucopurulent discharge, a lowered temperature, pulse less, bounding headache diminishing unless sinuses are involved, whereupon headache pressure symptoms increase, accompanied by dizziness. *Treatment:* Hot alkaline nasal douches, cocaine hydrochloride to nares, oil sprays, strychnine sulphate, $\frac{1}{100}$ grain, three times a day, egg and milk, increased exercise, alcohol rubs twice daily; hexamethylenamine, 5 grains internally, three times a day.

As suspicious indications of sinus involvement the author emphasizes the following: 1. Any coryza which does not tend to early recovery. 2. Any constantly recurring coryza with obstruction in nares. 3. Any unilateral discharge. 4. Headaches which are not relieved by glasses or purges. *Treatment:* Of remedies cocaine, 1 to 2 per cent. is the most efficient; epinephrin comes next, 1:5000; and 40 per cent. ichthyol in wool fat may be used locally to deplete the swollen mucosa. Internally, 5-grain Dover powders every three hours; salts as cathartics; ice-bag to sinus; hot baths and hot nasal irrigations. Epinephrin gives more after irritation, causing more sneezing and swelling of the mucosa than cocaine. Many disagreeable symptoms are caused by cocaine, and great care should be exercised in applying it; if one should happen to use too much cocaine, the patient should be given aromatic spirits of ammonia. People will faint from a 1 per cent. solution as easily as from a 20 per cent. The drug seems to affect them in two ways. In the nares the irritation of rubbing it on the turbinates has in the author's experience, many times caused patients to fall over. Or, an excess runs down the throat and causes a choking sensation, which alarms the patient.

After thorough cocainization, the

author believes in douching the nose with warm saline solutions. The good results of this far outweigh the bad. The author states that he has aborted many attacks of acute otitis with warm nasal irrigation and an ice-bag to the ear.

In addition to the cocainization of the natural sinus orifices, where required, the author advises rest in bed with ice-bags constantly applied to the face. Calomel and saline purges help materially. If the patient is not markedly improved in ten days to two weeks, one may be sure that there is a more serious condition, and the case is brought to the operative stage. N. P. Stauffer (New York Medical Journal, March 28, 1914).

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Deep Skin Grafts.—The writer calls attention to the value of very small skin grafts, especially if they contain more true skin than the superficial grafts advocated by Reverdin. The deeper grafts give a more stable healing, with a final result more like the normal skin, than when the thinner grafts are used. They may be placed on fresh wounds, but are usually applied to granulating surfaces. The granulations must be clean, firm, rose-pink, and not exuberant. Careful attention to this point is necessary. On the day preceding the operation, all secretions and crusts are removed. The granulations are painted with tincture of iodine and dressed either with balsam of Peru and castor oil, 1:3, or with moist boric or salt gauze. The dressings are removed at the time of operation, and the wound washed carefully, without causing bleeding, with sponges dipped in warm salt solution. The surface is dried thoroughly and a pad of dry gauze is placed over the wound; it is pressed down firmly on the granulations, and is only removed when the operator is ready to apply the grafts. The surface to be grafted must be thoroughly dry, as the grafts adhere better and are less likely to be subsequently displaced. Autografts are more successful than isografts. The region from which the grafts are taken has little effect on the success or failure of the grafts. A large number of these grafts may be taken from a comparatively small area, so that it is possible to use small grafts on extensive wounds without any severe tax on an ill patient. Before removing the grafts the skin is shaved and washed with green soap and water, rinsed with sterile water and sponged with ether, followed with alcohol and finally rinsed with normal salt solution, and dried. For anesthesia, the author uses an injection of 1 per cent. quinine and urea hydrochloride solution or 0.5 per cent. solution of novocaine, with a small amount of epinephrin. The grafts are obtained most simply by picking up a bit of the epidermis with a straight intestinal needle held in an artery clamp. A little cone is thus formed and the base of the cone is cut through by depressing the blade of the knife. The graft, still on the needle, is transferred to the wound with raw surface downward. The grafts are placed in rows, not more than 5 mm. being left between the grafts. The protective is pressed down firmly over the grafts with a gauze pledget, and the edges of the grafts will uncurl and spread out evenly on the wound. The procedure is continued until the whole surface of the wound is covered. The dress-

ings should be removed on the second or third day, and any wound secretions mopped up or washed off with a gentle irrigation of normal salt solution. Some bland ointment should then be applied. J. S. Davis (Journal of the American Medical Association, September 19, 1914).

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Eye and Ear, Phagocytic Treatment of Diseases of.—Report of a case suggesting that the ordinary treatments of ocular inflammatory affections can be strongly reinforced by the phagocytic action of nuclein. This case (severe keratitis) was but one of many in which the author found nuclein of decided benefit. If given in time it aborts styes, boils, acne pustules, acute otitis, coryza, influenza, enlarged glands, gingivitis, incipient dental abscess, etc. Even when suppuration has occurred it frequently happens that, under nuclein, the inflammation subsides and the pus absorbs. The product has a beneficial action on keratitis, iritis, dacrocystitis, and, in a lesser degree, on conjunctivitis and chronic middle-ear disease.

Other observers have recorded its effect in improving general nutrition and increasing resistance to pathogenic germs. The author is convinced that there is much more rapid healing of operation wounds and less danger of sepsis if nuclein be administered.

A more powerful preparation for phagogenic treatment is the mycolysin of Doyen, of Paris. This is stated by him to be "a preparation of phagogenic colloids extracted from a certain number of natural ferments," and has an even more powerful effect than nuclein in producing increased phagocytosis. These remedies, nuclein and mycolysin, deserve more extended use. J. P. Henry (Lancet, May 30, 1914).

* * *

Hypotension with Definite Symptomatology.—The author discusses cases of low blood-pressure occurring in the absence of any demonstrable organic lesion. These, in his experience, have been young adult or middle aged patients who presented certain symptoms in common, and were markedly improved by practically the same therapeutic measures. The chief symptoms are headache, vertigo, and mental and physical tire.

The author is able to offer no explanation of the hypotension.

The treatment given these patients is essentially as follows: They are instructed to go to bed at a reasonable hour and to rise at a certain time each morning. Immediately on rising they are to perform a series of systematic exercises, such as standing erect with the arms extended above the head, and stooping forward to try to touch the floor with the fingertips. Lying at full length on the floor or bed upon the back, with the hands under the hips, and bringing each leg alternately and slowly to a position at right angles to the body, etc. Every morning at least ten minutes must be devoted to this task. The exercises should at first be performed slowly, with intermissions of a few seconds for rest and deep breathing. As the muscles become accustomed to the work they may be increased in rapidity and duration, but never to the extent of producing exhaustion or prolonged breathlessness.

Following the exercises, a shower-bath, first hot and then as cold as can well be borne, should be taken; or if there are no such appointments, the patient should stand erect in the tub in which a little hot water remains, and sponge the entire body quickly with cold water or salt water. This should be immediately followed by a brisk rub with a coarse towel, continued long enough to produce redness of the skin. After this, rest in the recumbent position, well covered up, for five or ten minutes before dressing, is required.

Definite rules are given as to the number of hours work to be done a day, and a certain amount of relaxation is insisted upon.

In all of these cases ascending doses of tincture of nux vomica were prescribed, beginning with 15 drops three times a day after meals and increasing 3 drops a day, until the first sign of the physiological action appears, when the dose is dropped 5 drops and maintained there for a period of two to five days, after which the number of drops is decreased 15 drops a day, down to the original 15 drops, three times a day, which dose is maintained for a week before the nux vomica is discontinued. One patient took 75 drops three times a day without experiencing any physiologic effect.

For coexisting constipation Fernet's special exercises were ordered. Small rises of pressure in these cases bring about marked improvement of the condition. E. H. Goodman (American Journal of the Medical Sciences, April, 1914).

* * *

Internal Piles, Prevention of Pain After Operation for.—The relief of pain by opium and morphine, while preferable to allowing the patient to suffer, is not satisfactory. To be of real use the drug must be given at frequent intervals for several days. Even then it makes the patient feel ill and uncomfortable, and often renders him quite miserable. If a wound is made with no bruising or tearing of the tissues, under aseptic conditions, through clean tissues, and is kept aseptic and at rest, pain, except of a very slight and transient character, does not result. The anal region is no exception to this rule. By a slight alteration of the technique of the operation the conditions usually obtained for other operations can be secured when operating for piles. Very careful attention to the details of aseptic technique must be observed. The patient must be so prepared that the rectum is quite empty and will remain so for some days. This is essential. The rectum and the whole of the field of operation must be thoroughly washed out with soap and water, and afterward with a suitable antiseptic. The sphincter should not be stretched or damaged in any way, and the patient must therefore be thoroughly and deeply anesthetized. The operation must be carried out with as little damage to the tissues as possible. Pressure forceps should not be applied to tissues which are not going to be removed; the mucous membrane or skin at the anal margin must not be included in ligatures, and the number of ligatures applied for the control of hemorrhage must be reduced to the smallest possible number. After the operation the wound must be bathed with some suitable antiseptic, the best being 1:40 phenol. Lastly, some form of

dressing must be applied which will prevent infection of the wound. For this purpose the author has found sterilized vaselin to be the best, and the lower part of the rectum may be filled with this.

For the last ten years he has been operating for piles on these lines, using the ligature operation in all but a few special cases, and has found that post-operative pain is not more severe or frequent than after operations for hernia or varicose veins. Morphia is not required except as a hypnotic or to prevent the bowels from acting, and in the great majority of cases there is no pain of any consequence after the operation.

Pain when the bowels act for the first time is avoidable with care and good nursing. There is nothing to be gained by keeping the bowels confined for more than three or four days, as by that time the wounds in the anal canal have commenced to granulate and infection will not result in pain. After this a mild aperient daily is all that is necessary. The author never allows the interior of the bowel to be interfered with in any way until all the ligatures have separated, except by the administration of a small injection of oil into the bowel daily to assist smooth action and protect the surface of the wounds. Ordinary diet, somewhat diminished in amount, is allowed after operation.

Of the last 200 cases operated, only 28 (14 per cent.) complained of pain after the operation sufficiently severe to require an injection of morphine; and in only 8 cases (4 per cent.) was the pain bad enough to require more than one injection of morphine. In all the remaining cases pain was altogether absent or was relieved by 10 grains of aspirin, or by some simple measure such as a hot-water bottle.

These figures refer only to the ligature operation, cases treated by tie cautery or Whitehead's operation having been excluded. P. Lockhart Mummery (Lancet, May 2, 1914).

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Liquid Paraffin in Enteric Fever with Constipation.—It is the exception in Egypt, to see cases of typhoid fever with diarrhea. Constipation is the rule, and it is often very difficult to manage. The author formerly treated it by daily enemata, preceded if necessary by an injection of olive oil; in most cases this was successful, but occasionally the result was not satisfactory. In 1912 one of his patients was so constipated during the beginning of her convalescence that he determined to use paraffin, with excellent effect; after that he commenced to use it throughout the illness, and such now is his routine. In cases in which, during former acute illnesses, enemata have acted with the greatest difficulty, paraffin, if an enema is necessary, acts easily and painlessly, and both patients and nurses have been more than satisfied with the result. It seems absolutely free from risk and, further, it probably acts as an emollient dressing to the typhoid ulcers. The only disadvantage seen from its use during typhoid fever was occasionally slight leakage per anum. The author gives the drug in the dose of ½ ounce (15 Gm.) at night, and, if this be not sufficient, in the morning as well; it is best taken floated on the top of a little soda water. With such dosage enemata are often unnecessary,

though the author still often orders the bowel to be washed out so as to remove as much toxic material as possible. L. P. Phillips (Lancet, July 25, 1914).

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Nephritis, Serum Therapy in.—Experience has proven, according to the author, the utility of treatment with serum from the renal vein in nephritis. Such serum relieves disturbances arising from autointoxication and suppression of the renal excretion. The ammoniacal odor of the breath ceases, the dyspnea is relieved, and sometimes the phenomena of congestion, bronchopneumonia, and even hydrothorax rapidly diminished. The serum lowers blood-pressure, and sometimes checks hemorrhages. The serous effusions often improve, and the gastrointestinal disturbances yield promptly to serum therapy. The urine is considerably increased in amount—from 1 pint to 3 or 4 quarts in twenty-four hours—and the albumin rapidly diminishes. Most frequently there is a large excretion of urea, without any change in the chlorides. In other cases, the urea does not vary, and there is hyperchlorides. In other cases, the urea diminishes rapidly.

The indications for renal serum therapy are the following: 1. Uremia from abrupt suppression of the renal function (as in scarlatina or pneumonia), or from a violent congestive exacerbation in the course of a chronic nephritis, or from obliteration of a ureter. 2. Toxemia developing during the course of a chronic nephritis, because of indiscretions of diet, or because of a sudden hypertension, or an attack of renal congestion. 3. Acute nephritis arising from exposure and infections, without true uremic symptoms, but with headaches, dyspnea, and diminished urine flow. 4. Renal disorder in heart disease. 5. Albuminuria of pregnancy and eclampsia. Teissier and Thévenot (Progrès médical; New Orleans Medical and Surgical Journal, June, 1914).

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Potassium and Sodium Iodides and Iodine, Action of, on the Heart and Blood-vessels.—The author reports a study of the activity of these drugs based upon perfusion of the blood-vessels and hearts of cold- and warm-blooded animals, observation of the behavior of excited arterial rings and strips, and blood-pressure experiments. The iodine ion proved to be a powerful stimulant to both heart and vessels in experiments on isolated organs. Their stimulating effect is greatly inhibited in the intact animal, however, by their chemical combination with the proteids of the blood. Whether the resulting compound is a stable one, or whether it is loose, slowly setting iodine free, remains an open question; if iodine is set free a stimulating effect is to be expected. Sodium iodide possesses no depressing property, for the sodium ion is a vasoconstrictor and cardiac stimulant, and the iodine ion, in so far as it is free to act, has the same action. Potassium iodide, on the other hand, clearly shows the depressing effect of the potassium ion on the heart and vessels, especially of mammals, both on isolated organs and in the living animals. It is therefore not immaterial which of the iodides is chosen for the purpose of depressing the circulation, *e.g.*, in a case of aneurism. So far as experi-

mental evidence goes, the iodides possess no special virtue of lowering blood-pressure; the effect is really due entirely to the potassium, and could be produced even more efficiently with other potassium salts. D. I. Macht (Bulletin of the Johns Hopkins Hospital, September, 1914).

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Septic Processes, Alkaline Treatment of.—A deficiency of alkali is responsible for defective production of antibodies. By administering alkalies the author is convinced that he has tided certain patients past the danger stage who would have been lost without it. He mixed 10 or 20 Gm. of sodium bicarbonate in a bottle of seltzer water and had the patient drink this during the day. Children took half this amount. Some of the patients took it for weeks without disturbances; a healthy stomach rebels at these large doses of an alkali. Sometimes pain in the stomach compelled suspension for a day or so, but diarrhea was regarded as useful unless too profuse. The alkali can be given by protoclysis or by intravenous infusion. The cases reported were of severe septic processes, osteomyelitis, scarlatinal nephritis with abscess, etc., and all recovered. Vorschutz (Deutsche Zeitschrift für Chirurgie, cxxvii, Nu. 5-6, 1914).

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Sodium Salicylate, Rectal Administration of.—The author recommends the intrarectal administration of sodium salicylate in refractory cases of acute and subacute rheumatism While salicylate acid therapy is to be regarded as a specific in rheumatism, there are many failures. No doubt there may be foci of reinfection in which surgical measures may be required, but in very many cases insufficient dosage is the cause—due most often, perhaps, to intolerance of the drug by the mouth. The intrarectal method has for its justification its ability to answer the requirements of any therapeutic agency: (1) ease of administration; (2) ready absorption of the drug; (3) minimum of untoward effects; (4) ability to administer large quantities of the preparation, as is to be advocated in bactericidal therapy; (5) removal of the residue of the drug from the bowel by subsequent enema, if the dosage should ever prove excessive. The results are more prompt than from any other measure. The author has used the method in 125 cases. The mode of administration is as follows: A cleansing soapsuds enema is given and immediately followed, after it acts, by the salicylate enema, given with the Davidson syringe and a rectal tube inserted 6 to 8 inches. The dose varies with the size and sex of the patient and the severity of the case. The first adult dose in men is usually from 8 to 10 Gm., in women 6 Gm., the latter being more susceptible to the salicylate than men. The amount of salicylate to be given is incorporated in 120 to 180 c.c. of plain or starch water, with the addition of 1 to 1.5 Gm. of opium tincture. The dose may be repeated within twelve hours, but usually a daily enema suffices, with doses increasing perhaps from 30 to 50 per cent. daily until the limit of tolerance is reached. The largest daily dose which was given was 24 Gm. The only symptoms of salicylism usually appearing was tinnitus and excessive perspiration. The ready absorption was shown by a strong ferric chloride

reaction in the urine within thirty minutes. It would seem that the greatest absorption of the drug is within twelve hours. The promptness of the results and general efficacy of the treatment are illustrated by the cases reported. L. G. Heyn (Journal of the American Medical Association, September 19, 1914).

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Tuberculosis, Emetine in Pulmonary.—While emetine probably has no effect on the tubercle bacillus, the author considers it a valuable addition to the measures available for reducing congestive conditions in the lungs. It is, therefore, both a preventive and curative agent in tuberculosis. The author uses ampoules containing ½ grain of emetine in 15 minims of distilled water. Diluting this in 4 parts of water, 1 minim equals 0.04 cg., and the author has come to consider 4 minims of this dilution a suitable dose to give for the purpose of controlling expectoration or lessening congestion.

Some of the cases of hemorrhage in which the author used emetine had only slight and occasional bleeding, but copious expectoration. Not only did all traces of blood disappear from the sputum, but the sputum itself decreased or ceased. This observation induced the author to employ the drug in some cases of copious expectoration alone, and the results were sufficient to justify announcement to the general profession. The drug was used in over 40 cases. Raeburn (British Medical Journal, March 28, 1914).

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Wounds, Protection of Granulations in.—The usual method of occlusive dressing of granulating wounds by means of antiseptic ointments and moist antiseptic gauze is irrational. The dressing the author has devised consists of ordinary white mosquito net which has been infiltrated with a mixture of paraffin and petrolatum, of each, 2 parts, and stearin, 1 part. This allows the granulations to grow through its mesh, but not intimately into its threads, and removal is not attended by the usual accidents. Drainage through its interstices is free into the upper dressing, and it does not conflict with other elements required by the case. The technique is as follows: The mosquito net is cut into pieces of suitable size for convenient handling. The paraffin, petrolatum, and stearin in proper proportions are placed in a porcelain or metal bowl and heated to the boiling point. In this heated liquid a double thickness of the net is immersed for three minutes. It is then removed, the excess of the mixture allowed to drain off, and the surfaces separated to clear the meshes. The pieces are then folded and wrapped in oiled paper. Several of the packages are wrapped together in a towel or dressing-cap and sterilized in an autoclave. The oiled paper prevents the absorption by the dressing-cap or towel of the mixture liquefied during sterilization. After immersion the steps of draining and separation must be accomplished rapidly, before the cooling is sufficient to congeal the mixture in the meshes so that they appear as tiny window-panes. The dressing may be rendered antiseptic by the addition of phenol to the heated mixture in 0.5 per cent. strength. The net is specially asked for by patients who have had it used on them, as it gives more relief than any other single step in the treatment. V. A. Dodd (Journal of the American Medical Association, April 18, 1914).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

1. Internally: Equal parts of precipitated sulphur and milk-sugar; patient to swallow several times a day as much as is held on tip of a penknife. 2. Externally: Paint at night with a mixture of 10 parts of sulphur, 25 parts of alcohol, and 5 parts of glycerin. 3. Regulate bowels. 4. Meat, eggs, cheese, and sugar to be avoided. 5. Later, a ten- to fourteen- day course of Röntgen-ray exposures, one-third or one-fourth erythem doses being applied at 6 or 8 sittings, to a total of one and a half erythem doses. 6. Four or five weeks after this course, application of mercury quartz lamp for twenty or twenty-five minutes. The skin is to be carefully protected for eight or ten days and then gone over with the comedo extractor, any red spots left being treated with sulphur. *Kromayer.* 357

Acne Keloid. TREATMENT. In early cases small, isolated nodules may be excised; they do not recur if the incision is free of the circumscribed sclerotic mass constituting the nodule. *Adamson.* 357

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Alopecia Areata. TREATMENT. (1) The B. P. unguentum hydrargyri iodidi rubri (diluted from 4 to 2 per cent.); (2) the unguentum hydrargyri oxidi rubri, with acetum cantharidis, ℥j to ℥j, and (3) equal parts of sodium chloride and petrolatum found seviceable in this condition. Pure phenol often gave good results. Causes of peripheral nervous irritation, such as carious teeth, errors of refraction, or aural defects, to be investigated. In severe cases pilocarpine nitrate, injected into the scalp every week or fortnight in doses of 1/10 to 1/6 grain, is sometimes beneficial. *Dore.* 358

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

In amenorrhea, relative or absolute, ovarian extract considered best remedy by author. *Bandler.* 91

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Angina Pectoris. TREATMENT. Concussion at level of seventh cervical vertebræ, together with hypodermic injection of 1/10 grain (0.006 Gm.) of pilocarpine, to increase vagus tone, gives relief more promptly than does morphine. *Jarvis.* 160

Ankylostomiasis. TREATMENT. Betanaphthol in 30-grain (2 Gm.) doses given the first thing every morning is likely to prove more effectual than eucalyptus or thymol. Starvation of patient during such treatment is unnecessary; in bad cases it may be harmful. *Keith.* 165

Appendicitis. DIAGNOSIS. Following sign found valuable in diagnosis of appendicitis in small children, who show no sign of localizing appendicular pain: Upon light pressure over both iliac fossæ, the child executes slight movements of the right leg. If the pressure be increased, the right leg becomes rigid and irregular movements of the left leg are executed. Often the face suddenly flushes when pressure is made with the finger over the appendix. *Veau.* 477

TREATMENT. The appendix should always be removed in cases of localized abscess, whether it is free in the abscess cavity or deeply buried by adhesions. Results are far better than where the appendix is allowed to remain, as the author found in a series of 501 cases; not 1 died of peritonitis. The Fowler position, saline proctoclysis, and drainage of the peritoneum with a large split rubber tube inserted to the bottom of the rectovesical pouch should be carried out. *Knott.* 541

Argyria. TREATMENT. Hexamethylenamine, 10 grains (0.6 Gm.), caused marked improvement in the patient's coloration in a case of argyria due to collargol. *Crispin.* 542

Arthritis, Chronic. TREATMENT. Injections of phenol-camphor used with benefit. Must be made only into joint, never into spongy bone. Formula: Phenol, 30; camphor, 10; alcohol, 30. Only 0.5 or 0.25 c.c. is injected at one point, except in streptococcic processes, where 2 c.c. are necessary. *Pohl.* 235

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bladder Papillomata. TREATMENT. Use of the high-frequency current is indicated

in the following classes of cases: (1) Papillomata of clinically benign appearance, not exceeding walnut size, even if multiple; (2) all recurrences, after either endovesical treatment or cystotomy; (3) cases of hemorrhage from malignant growths that cannot be arrested by the usual means. *Gehrels.* Page 610

Bronchitis, Acute. TREATMENT. Inhalations of recently prepared tincture of iodine from wide-mouthed bottles found to cure bronchial catarrhs in four days. Inspirations —from 4 to 8 or more at each sitting—to be more or less deep according to severity of case. Inhalations to be repeated 5 or 7 times a day. If much mucus, expectoration to be assisted by usual remedies. In children iodine tincture may be dropped on pieces of cotton to be laid on pillow (over oilcloth) while patient sleeping. *Torri.* 303

Bronchopneumonia. TREATMENT. Hot baths, followed by brief cold affusion, in acute bronchitis, bronchiolitis, and bronchopneumonia in young children reduce fever, stimulate expectoration, deepen breathing, exert soporific effect, improve appetite, stimulate elimination through skin, and seem to act specifically in shortening disease. Bath water is at 41° C. (105.8° F.), hot water being added as cooling occurs. Patient is bathed every three hours, up to 5 times a day. Baths particularly appropriate for feeble children who became chilled at periphery with internal temperature high. The weaker the child and higher the fever, the more frequently baths are given. Where the temperature not above 39° C. (102.2° F.), ten-minute bath is given 3 times a day. Hot bath is not contraindicated where temperature exceeds 40° C. (104° F.) in infants or very young children, though for older children warm baths may be substituted. At conclusion of each bath nurse elevates child from hot water so back of neck is exposed, and cold water is dashed once over neck, causing reflex gasp for breath. Child is next reimmersed momentarily in hot water and cold water poured on chest, after which he is dried, wrapped in warmed clothes, and placed in warmed bed. Baths to be continued once daily into convalescence if patient coughs. *Arneth.* 55

Burns. TREATMENT. (1) Hypodermic injection of morphine and atropine. (2) Immerse burned area in, or cover with light cloth moistened with, cold water to which has been added 1 teaspoonful of sodium bicarbonate or chloride per quart; continue until morphine effect manifest. (3) Spray or mop burn and surrounding surface with hydrogen dioxide, mop with dry gauze, apply gauze strips dipped in 2 per cent. picric acid solution in dilute alcohol, and cover with thin layer of cotton and adhesive strips or bandage. Allow dressing to remain till soiled, then reapply. (4) About third day, open blisters and mop away contents. (5) Where sloughing: Remove dead tissue as it loosens, cleanse surface with dioxide, dry, mop with picric solution, put on strips of rubber tissue previously kept in 1:1000 mercury bichloride solution, and cover with picric acid compress and cotton. *Plain.* 299

In infected burns a dressing of mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), is effectual. *Macfarlan.* 554

Cancer. DIAGNOSIS. Marked diminution of the area of cardiac dullness in the recumbent posture, as determined by percussion, found in 87 per cent. of 111 cancerous cases and only 16 per cent. of 107 noncancerous cases. This sign may be present in cancerous cases that show no wasting. When the sign is present, diagnosis of carcinoma should be rejected only after careful consideration. In some cases the sign has appeared early enough to enable successful resection to be carried out. *Gordon.* 234

Cancer, Gastric. DIAGNOSIS. Positive or negative diagnosis made by serial röntgenography in 616 cases. Of 97 cases operated on, diagnosis found absolutely correct in 94. Gastric cancer at any stage, or indurated gastric ulcer, can be detected by this method as accurately as renal calculi or bone fractures. *Cole.* 301

Cancer, Mammary. DIAGNOSIS. Value of following early signs emphasized: (1) Slight changes in the contour of the areola, the border becoming irregular. Later, areola may become smaller and even almost disappear. (2) Elevation of the nipple when compared with that of opposite side. (3) "Pig skin" is another evidence of the local contracture, which is of great diagnostic significance. *Van den Berg.* 603

Cancer of Rectum. TREATMENT. Soft, annular, vascular growths are generally much more favorably influenced by radium treatment than flat, hard plaques. Growths in the upper half of the rectum appear the more amenable. Previous colostomy is often advisable. The routine method consists of a thirty-hour exposure—five days of six hours each—with a tube containing 100 mg. of radium bromide, screened with a 2 mm. of lead and 3 mm. of rubber, in actual contact with the growth, the series of exposures being repeated in six weeks. *Pinch.* 612

Cellulitis. TREATMENT. Packing infected arm from fingers to shoulders in hot mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection promptly. *Freese.* 304

Chancroid. TREATMENT. Fuchsin in 5 per cent. ointment with petrolatum found very efficient in 9 cases, healing them in less than two weeks. The average duration of treatment was eight days. The parts are cleansed and the ointment is to be applied

by the patient twice daily. If the prepuce can be brought over the glans no dressing is required. Fuchsin, however, stains linen red. *Kantawala.* Page 604

Colles's Fracture. TREATMENT. In reduction soon after the accident, without anesthesia, the most satisfactory method is a sudden, sharp jerk of the wrist administered by clasping one's fingers under the upper fragment, making pressure with the thumbs on the dorsum of the lower fragment, and abruptly pronating the hands. *Allen.* 419

Conjunctivitis. TREATMENT. Instillation of a 1 per cent. solution of ethyl hydrocupreine hydrochloride, allowed to remain one-half minute, recommended in pneumococcic conjunctivitis, dacryocystitis, and corneal ulceration. *Sattler.* 481

Constipation. TREATMENT. Constipation and rectal irritation in neurasthenics greatly benefited by the perineal and anal douche, hot as can be borne, followed by cold douche at 60° to 50° F.; stronger revulsive effects are obtainable with an alternate hot and cold application. *Pope.* 50

Corneal Ulcer. TREATMENT. Bathing part with 1 per cent. ethyl hydrocupreine solution for one-half minute every hour, six hours first day and twelve on next, found rapidly effectual in a case of ulcus serpens with hypopyon from chronic dacryocystitis. Sac expressed and conjunctiva cleansed with boric acid before each treatment with ethyl hydrocupreine, which was dropped on the ulcer. Practically specific against pneumococcic infections. *Wiener.* 168

Vioform in 2 to 4 per cent. ointment with petrolatum base, or in 1 or 2 per cent. strength in sterile oil, found useful in ulcers and injuries of cornea and sclera. *Dutoit.* 495

Coryza, Acute. TREATMENT. 1. Pill of morphine, ⅙ grain (0.01 Gm.), and a small dose of nitroglycerin. 2. In two hours, 10 grains (0.6 Gm.) of acetylsalicylic acid. 3. Hot bath. 4. On following morning, magnesium sulphate. 5. Locally, an ointment containing menthol, methyl salicylate, and oil of wintergreen in a lanoline base, to be sniffed back in nostril frequently, and followed by chloretone inhalant. 6. If discharge, feverishness, and periodic headache persist after a few days, patient should inhale steam from boiling water to which menthol and alcohol have been added. *Wilson.* 484

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solution. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delirium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* 110

Dengue. TREATMENT. Three out of 7 cases were rapidly improved by administration of 30 drops of a 1:1000 solution of epinephrin by the mouth. Epinephrin is likely to prove useful in shortening convalescence in this disease and in mitigating the grave cases. *Khoury.* 329

Diabetes Insipidus. TREATMENT. Case in which injections of pituitrin caused marked, though but temporary, improvement. *Farini.* 277

Diabetes Mellitus. DIAGNOSIS. Frommer's test recommended for detection of small amounts of acetone. Treat about 10 c.c. of urine with 1 Gm. of sodium hydroxide in substance and without waiting for it to dissolve; add 10 or 12 drops of a 10 per cent. solution of salicylaldehyde in absolute alcohol. Heat to 70° C. In the presence of acetone, marked purple-red color develops at zone of contact with alkali. This test indicates presence of 0.000001 Gm. of acetone. Urine must be diluted so that its specific gravity is about 1.01. *Muhlberg.* 232

TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.,* of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often causing glycosuria to disappear. *Cornwall.* 110

Dry vegetable diet recommended for cases in a state of acidosis. Patient to take daily 10 ounces (300 Gm.) of dried legumins (peas, beans, lentils), 5 ounces (150 Gm.) of butter, 3 to 6 eggs, and 3 to 6 aleuronat or gluten rolls. Green legumins may also be given. Soy beans may be used. This diet to be followed at least 3 days at a time. The starch it contains is better utilized than that of other foods, glycosuria often being not higher than under a diet poor in carbohydrates. The diet also combats nitrogenous loss; somnolence and anorexia, where present, often disappear, and diaceturia diminishes. *Labbé.* 300

Diphtheria. TREATMENT. Iodine ointment used locally in 30 cases. With 2 cotton pledgets secretions and false membrane were first removed and the surface dried, and a third pledget, smeared with the ointment, was then rubbed on the affected surface and surrounding area. This was done every 3 hours, or in severe cases every 2 hours, until improvement occurred. Many cases cleared up within a few hours, becoming free of false membrane on the second or third day. *Thomas.* 364

Dysentery, Amebic. TREATMENT. Use of quinine advised as an adjuvant to ipecac in resistant cases of this affection. Successful results were thus obtained in cases that failed to react favorably to emetine. *Brooke.* 417

Dysentery, Bacillary. TREATMENT. In acute form: (1) Rest and warm covering; (2) only small amounts of food at a time; (3) calomel at the outset; (4) acid drinks; (5) enemata of saline or soda solution or of methylene blue. In chronic form: (1) Rest; (2) enemata of 1:500 or 1:1000 silver nitrate, 0.25 to 0.5 per cent. tannic acid, 1:500 or 1:1000 thymol, 1 to 2 per cent. resorcinol or creolin, or enemata of gum arabic mixed with bismuth subgallate or iodoform; (3) phenyl salicylate, tannigen, ichthyol, or calomel internally; (4) serum treatment, 10 c.c. in mild cases, 10 c.c. twice at six- to ten- hour interval in medium cases, and 40 to 60 c.c. in severe cases, not exceeding 20 c.c. at a time when serum used daily; (5) appendicostomy or cecostomy with irrigation in severe cases. *Bassler.* Page 111

Following treatment recommended: 1. Calomel, 5 grains (0.3 Gm.). 2. Barley water and boiled milk for a day or two. 3. Warm applications to abdomen. 4. Six hours after calomel, an injection into bowel of sodium salicylate, 13 Gm. (3¼ drams); water, 650 c.c. (1⅓ pints) at body temperature, with a small dose of Dover's powder. Injection to be repeated if necessary on alternate days. In children, about 90 Gm. (3 ounces) of the salicylate injection should be used. 5. In chronic dysentery, a 10 per cent. decoction of simaruba bark, 1 dram (4 Gm.) every three hours. *Lutsch.* 481

Dysmenorrhea. TREATMENT. Cocaine applied to tuberculum septi in nose and anterior portion of inferior turbinate on both sides, followed by application of trichloracetic acid over these spots, in 93 cases. Four applications made between periods. Cases with premenstrual headache, nausea, and colic at onset of flow—but without organic pelvic lesions—completely relieved. Of 81 cases sending subsequent reports, 48 had been cured and 14 improved. *Mayer.* 167

Atropine found very useful, except in cases with high blood-pressure, when pressure must be reduced and cause sought and removed. *Stolper.* 235

Following exercise recommended: The patient lies on her back with the knees flexed and one hand on adbomen, and is then directed to see how high she can raise the hand by lifting the adbominal wall, and then depress it by contracting the abdominal muscles. This is to be repeated 10 times, night and morning. Jerky movement is to be avoided. Pain was lessened in many cases and wholly removed in a large number by this method. *Mosher.* 481

Cases of dysmenorrhea due to functional ovarian deficiency are almost invariably relieved by corpus luteum extract—obtained from pregnant cows only—in 5-grain (0.3 Gm.) capsules taken three times a day. *Dannreuther.* 520

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* 11

In mild acute cases paint on lesions an aqueous solution of picric acid several times daily; in more severe cases apply wet dressings of the acid, held by facial mask. Prompt and gratifying results. In subacute and chronic types cure hastened by beginning treatment with two or three days' application of picric acid solution. *Wilcox.* 176

In moist infantile eczema involving chiefly the head and face, a compress of boric acid solution, or 1 per cent. resorcinol solution, or even normal salt solution, will effect a transformation in twenty-four to forty-eight hours. Two masks are made of several thicknesses of fine linen, one being carefully washed while the other is in use. The compresses should be renewed every three hours. When the surface has become dry and shining, an ointment of boric acid and ichthyol (3 per cent. of each) should be substituted. In other cases less acute, frequent applications of a 3 per cent. aqueous solution of ichthyol followed by calamine lotion are excellent. *Chipman.* 605

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Elephantiasis. TREATMENT. Case in which Kondoleon's operation was successfully performed, with continuous postoperative improvement. Deep fascia of the leg was dissected off the muscles from the inner and outer aspects of the part, and cut away in one piece. The same area of subcutaneous tissue was removed by splitting it off the skin, the latter being then stitched back in position. Thiosinamine and salvarsan were also used. *Royster.* 546

Epiglottiditis, Acute. TREATMENT. In acute phlegmonous inflammation of the epiglottis and contiguous tissues, frequently a primary condition, half-hourly applications of a 25 per cent. ichthyol-glycerin mixture, preceded by incision, prove very beneficial. Stock or autogenous vaccines should be considered in the treatment. Ice may be used externally. *Lederman.* 605

Epilepsy. TREATMENT. Four patients with severe essential epilepsy treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic. Considerable benefit. Dose of fluid injected, 3 to 5 c.c. biweekly or weekly. Improvement striking both as to severity and frequency of attacks. In some, petit mal took place of grand mal. Greatest improvement noticed especially if injected fluid was taken from other patients during recurrent

attacks, no matter how slight the latter. *Gordon.* Page 235

The tendency to bromism may be combated by 1½ grains (0.1 Gm.) of dried thyroid every morning for three weeks, suspending the administration from time to time for a fortnight. Two doses, each of 15 grains (1 Gm.), of potassium bromide are to be given daily at 10 A. M. and 10 P. M., dissolved in half a wineglassful or less of water. The bromide is to be given regularly. A chlorine-free diet is enjoined, and, should acne appear, the pustules are to be treated with an application of chlorinated soda solution and sulphur ointment. *Sicard.* 601

Epistaxis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin brought early relief in 5 cases. *Citelli.* 279

Epithelioma. TREATMENT. Concentrated sunlight, focused on growth with ordinary magnifying glass, found effectual. Useful where X-rays and radium not available. Invariably successful in obstinate recurrent ulcerative patches on face or nose. Focus sunlight on sore for ten or fifteen minutes at a sitting. If scab present, concentrate rays till burning is felt, then lengthen focus to cover wider area. Induce burning again every few minutes. Treat every day or two till scab easily removed, then apply a little cocaine and after three or four minutes apply rays so as almost to cauterize base of ulcer. Alternate with milder applications for fifteen minutes. Under milder treatments thereafter, at longer intervals, cure usually complete in three to six weeks. *Seelye.* 166

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

In facial erysipelas: Have beside bed bowl of boric acid solution in which ice is placed. Keeping cloths frequently moistened with the solution continuously on face effectually relieves pain and burning. Where leg or arm involved: Wet dressings of boric acid or aluminum acetate. In migratory cases: Ichthyol may be applied or surfaces painted with picric acid solution. *Erdman.* 112

Pyramidon used in 20 cases with uniformly favorable results: Diaphoresis, antipyresis, sedation, fading of eruption, which ceases to spread, and improved general condition. Diuretic beverages also given. Locally, following ointment used: Phenolis, camphoræ pulveris, ana gr. xv (1 Gm.); adipis lanæ hydrosi, petrolati, ana ℥ss (15 Gm.). *Satre.* 167

Discomfort and pain more rapidly relieved by picric acid solution than other agents, and edema disappears promptly. *Wilcox.* 176

Two facial cases treated by local applications of hepatic lipoid, rapid recovery following. *Tilmant.* 416

Following solution recommended as a dressing for the affected area: Mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces). *Macfarlan.* 554

Series of 148 cases treated with leucocyte extracts. The results obtained were constant and marked, the symptoms in practically all the cases disappearing within a few hours after the first injection, and the rash gradually fading. *Hiss and Dwyer.* 588

Erythema. TREATMENT. Epinephrin used in 3 cases of erythematous taches of the face ("red nose"). A 1:1000 solution was given internally in 5-minim (0.3 c.c.) doses in water 3 times daily half an hour before food, and the treatment continued during five to six months (with short intervals). The erythema almost entirely disappeared, and a year and a half after treatment it had not reappeared. No bad effect on the heart or blood-pressure was observed. *Rothmann.* 348

Erythema Multiforme. TREATMENT. Use of a colon bacterin may be of value in this condition. *Hazen.* 542

Felon. TREATMENT. Mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection in an unusually short time. *Freese.* 304

Where there is as yet no pointing or definite formation of pus, a wet dressing of mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), will usually reduce the course of the affection and frequently abort it. *Macfarlan.* 554

Fracture of External Malleolus. TREATMENT. Case of oblique fracture of fibula, involving malleolus, in which, great pain continuing after splinting, the malleolus was exposed by rectangular incision and, after detachment of external lateral ligament, entirely removed. The foot was splinted at a right angle to the leg. Pain ceased, and on the twelfth day the patient could stand on the foot without discomfort. Similar treatment recommended for all detached external malleoli. *Bland-Sutton.* 360

Fracture of Femoral Neck. TREATMENT. In adults the author recommends the addition of a side pull to the Buck extension. The side pull is exerted on the upper end of the thigh by means of a weight and pulley, the latter being placed opposite the crest of the ilium. It can be attached to the wall, a standard, or the side of the bed, and should be so adjusted that the pull is upward and outward at an angle of 45 degrees. The amount of weight at the foot of the bed should be sufficient to overcome the shortening, and the side weight about one-third of the foot weight. A well-padded splint of

surgeon's felt, or sole leather, should be applied to the inner and under sides of the thigh, coming well up to the perineum, and fastened to the thigh by adhesive plaster encircling the limb. A band made of several layers of gauze or cheesecloth is convenient for the side pull. It should be fastened to the splint by adhesive plaster. By shortening the lower arm of this gauze the limb can be rotated inward, thus avoiding eversion. *Moore.* Page 361

Fracture, Ununited. TREATMENT. Osmic acid, 0.02 Gm. in 1 per cent. solution, injected directly into focus in a case of ununited fracture of fibia and fibula, rebellious for six months. Injection repeated 3 times in two weeks. Patient discharged two weeks later. Stimulating action of the acid on periosteum and marrow confirmed in rabbit experiments. *Segrè.* 307

Fractures about the Elbow. TREATMENT. These cases should be started on an internal right angular splint. At the second or third dressing, while the fragments are still plastic and when the swelling has subsided, the wrist should be slung from the neck, obtaining the most acute flexion possible without too much pain. The flexion is increased at subsequent dressings for two or three weeks, when it is decreased again until all dressings are abandoned at the end of four or five weeks. *Allen.* 419

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ʒiiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

In furunculosis of the external auditory canal, cleanse canal of cerumen, discharge, polyps, etc., and insert a wick of cotton, or of gauze if there is a discharge. Ripe furuncles should first have been incised in their centers. The wick is to be kept saturated with alcohol, plain or with boric acid, and should be changed daily. If pain is severe, and no pus can be located, it is best to give a sedative and wait for pointing, rather than incise at random. *Lothrop.* 482

Wet dressing of mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), recommended in the early stages of a boil. *Macfarlan.* 554

Gall-stones. DIAGNOSIS. In nearly every case of symptoms referable to gall-stones there is some calcium encrusted on the cholesterin core of the stones. The latter can, therefore, be detected with the X-rays. A small diaphragm, 1½ inches in diameter, and a fairly soft tube with rapid exposure should be used. A subsequent bismuth examination usually shows evidences of gall-bladder disease. To distinguish gall-stones from renal calculi, plates should be taken on both anterior and posterior aspects. The anterior plate will show the shadows small and sharp; the posterior, large and blurred; the reverse holds in case of renal calculi. *George and Gerber.* 547

Gastric Atony, Acute. TREATMENT. Continuous lavage of stomach through nose recommended. Cocainize nose and work soft oiled tube with 8 to 11 mm. lumen down into stomach. Attach longer tube and carry to receptacle. Amounts up to 5 liters thus drain away. Keep outlet of tube at level of bed to prevent aspiration of mucous membrane. *Grosser.* 305

Gastroenteritis, Infantile. TREATMENT. *B. lactis bulgaricus* in tablet form administered in 55 cases, varying in severity from moderate degrees of infection—6 stools a day—to the most grave—20 or more. From 3 to 10 tablets a day were given to each infant, according to the gravity of the illness. Results: 43 gained in weight; 2 lost; 3 gained and later lost, and 7 showed no change. There were no deaths. The temperature came down to normal within one to three days, and in two or three days the stools became yellowish or brown, well formed, and free from curds, mucus, and blood. *Schwartz.* 364

General Paralysis. TREATMENT. Remissions may be prolonged by suitable doses of tuberculin ($\frac{1}{1000}$ to $\frac{1}{5000}$ mg. of tuberculin residue). *Jackson.* 236

Glaucoma. TREATMENT. In non-inflammatory glaucoma, when operation is consented to, Elliot's sclerocorneal trephining is by far the safest procedure and the most productive of results. In 29 cases thus treated there were no serious complications at operation in any case. Seven eyes with absolute glaucoma were preserved that formerly would have been removed. In 7 other eyes which were sightly a small degree of vision was gained by the operation. In the remaining 15 the eyes gained considerably in vision and usefulness. *Reber.* 362

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel

administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* Page 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Colloidal silicon injections used with benefit in a case of simple goiter. Trial of this measure is advised in both simple and exophthalmic goiter before operation is resorted to. *Suard.* 345

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Report of cases improved by administration, for several months, of 20 to 30 Gm. (5 to 8 drams) of quinine divided among twenty days in each month. *Gaultier.* 90

Next to operative treatment, where indicated, repose is important. The patients should be gotten out of their ordinary environment. A trip to an altitude of about 3600 feet often acts favorably, starting first at 1500 feet. The patient should be well nourished, on a carbohydrate-fat mixed diet. Galvanic stimulation of the neck is often useful; the anode being on the sternum and the cathode behind the angle of the jaw, a current of 1 or 2 milliampères should be slowly turned on for one to three minutes and then slowly turned off. *Bauer.* 411

Strophanthus administered in exophthalmic goiter with good results. Quinine may be simultaneously used. *Bate.* 513

X-ray exposure of the ovaries carried out in 10 cases of exophthalmic goiter, with favorable results. A gain in body weight followed in 8 cases, the exophthalmos was diminished in 4 and removed in 1, tachycardia was sometimes considerably reduced, and in 9 very marked subjective improvement was noted. Diarrhea ceased in 3 cases after the first exposure. Although no complete cure was effected, the author was led to conclude that, in the usual cases of moderate severity, irradiation of the ovaries yields more certain and rapid effects than the measures customarily employed. *Mannaberg.* 529

Purgatives are useful in removing indican in this condition. The author recommends a combination of podophyllin, cascara, and oil of black pepper; also sodium sulphate, given with potassium bitartrate. Proteins are to be added to or taken from the diet, as indicated both by the urine and the patient's weight. The Bulgarian lactic acid bacteria are always of great value. *Jones.* 597

Results obtained with radium justify a trial of it when other treatments have failed. Prolonged exposures—thirty or more hours in all—should be given, with heavily screened apparatus containing 200 to 300 mg. of radium, so disposed as to cover as much as possible of the gland surface. Three or four weeks usually elapse before any effect is appreciable. *Pinch.* 612

Gonorrhea. TREATMENT. Iodine treatment gave excellent results in gonorrhea in the female: (1) Swab external genitals with a 3.5 per cent. solution of iodine in alcohol; (2) force a few drops of same solution in orifices of Skene's and vulvovaginal glands through blunt hypodermic needle; (3) with patient in Sims's position, insert Sims's speculum, swab vagina dry with cotton, and paint cervix with iodine solution; (4) swab posterior vaginal *cul-de-sac* and wall; (5) introduce narrow strip of gauze high up against posterior wall, and remove speculum; (6) give hexamethylenamine, 5 to 7½ grains (0.3 to 0.5 Gm.) four times daily in plenty of water. Where cervix and uterus chronically involved: (1) Paint cervix with iodine; (2) grasp anterior lip with volsellum and remove any stringy discharge; (3) insert small uterine sound if required; (4) introduce intrauterine syringe to fundus and instill 1 dram (4 c.c.) of iodine solution while withdrawing; (5) treat vagina as in acute cases. Repeat applications every third day in both acute and chronic forms. In all cases order hot douches of 4 to 6 quarts (liters) of hot saline two to four times daily, always followed by a 1-quart (liter) injection of 1:5000 permanganate or 1:250 picric acid. *Hofmann.* 48

Best results are obtained by the "sealing-up" method when the patient is seen within forty-eight hours after the beginning of the discharge. A 5 per cent. solution of argyrol, to the amount of 25 minims (1.6 c.c.), is sealed within the urethra for six hours on each of five consecutive days, with non-contractile collodion. The latter can best be removed with cotton soaked in acetone. During the six-hour period no liquids should be ingested. After the urethra has been emptied, however, the patient is required to drink a

quart of water to flush out the parts. Next day he should prepare himself for the treatment by limitation of fluid ingesta. *Ballenger and Elder.* Page 557

Gonorrheal Vaginitis of Children. TREATMENT. Mixed autogenous vaccines of gonococcus and usually staphylococcus, streptococcus, diplococcus, colon bacillus, etc., used in 40 cases with uniformly good results. Average number of injections required for cure, 7. Initial dose, 25 to 50 million, then gradually increased. Interval between injections not less than five nor more than seven days. If after six weeks case still needs treatment, as shown by examination of discharges, a second vaccine should be made. *Wolff.* 49

Headache. TREATMENT. In headache or head pressure in nervous fatigue a fomentation applied for five or ten minutes twice, and followed by a cold compress, is effective. If headache is congestive, use hot foot bath, followed by ice-bag to nape of neck and cold compress to forehead. Sitz baths at 90° F., or cold foot baths, often relieve. *Pope.* 50

Hemoptysis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin nearly always brings relief in average cases. Where first injection fails, give a second, and later if necessary a third, the latter intramuscularly. *Citelli.* 279

Intravenous injections of 0.5 c.c. of pituitrin were followed almost at once by cessation of hemorrhage in 10 out of 12 cases. Where the hemorrhage recurred on succeeding days, the same prompt relief was obtained. *Rist.* 411

Hemorrhage, Cerebral. TREATMENT. Venesection used with good results and recommended in cases of apoplexy in full-blooded patients with blood-pressure of 200 mm. or more. Amount of blood let in author's cases, 12 to 48 ounces. Where vein at elbow not easily found in stout persons, there are usually varicose veins in legs which can be opened. *MacFarlane.* 121

Hemorrhage, Gastrointestinal. TREATMENT. Iodine tincture in small doses at short intervals found effective in checking hemorrhage and diarrhea in 6 cases of typhoid fever and in 4 of gastric ulcer. It also relieves abdominal tenderness in the latter condition. *Nottebaum.* 484

Hernia. TREATMENT. Inversion of hernia recommended in patients who take anesthetic poorly and maintain strong expiratory efforts, forcing viscera into sac under pressure. Primary union and cure of hernia in each of author's 7 cases thus dealt with. *Haynes.* 170

Herpes Labialis. TREATMENT. Picric acid solution causes rapid drying of lesion and tends to prevent extension. *Wilcox.* 176

Hodgkin's Disease. TREATMENT. Benzene, 5 minims (0.3 c.c.) three times daily at first, then increased to 10 minims (0.6 c.c.), caused marked regression of enlarged nodes, beginning two weeks after treatment begun, in a case previously treated unsuccessfully with X-rays. The 10-minim dose was continued for six weeks. *Lawson and Thomas.* 173

Hyperchlorhydria. TREATMENT. Cream diet considered useful. (See Ulcer, Gastric.) *Nichols.* 169

Following measures recommended: (1) Magnesium oxide, combined with sodium sulphate and belladonna in small amount. (2) All food to be well cooked and most carefully minced. (3) Patient to take 2 or 3 meals at two-hour intervals in forenoon, but nothing after lunch until 7 P.M., when only porridge to be taken. (4) Fluid intake to be generally diminished and restricted to hours when stomach not filled with food. (5) In severe cases, or where gastroptosis: Rest in bed for two or three weeks. (6) Hot compresses twice daily for two hours; cold compresses at night. (7) If hyperacidity arises on basis of a catarrh: Rinse empty stomach in morning with 1:1000 salicylic acid or 1:500 silver nitrate solution. (8) Bowels to be carefully regulated. *Schmidt.* 302

Hyperthyroidism. TREATMENT. Injection into enlarged thyroid of 1 to 4 per cent. solutions of quinine and urea hydrochloride caused marked improvement in 3 cases. *Watson.* 265

Ileus. TREATMENT. Continuous lavage of stomach through nose recommended in duodenojejunal occlusion, postoperative bowel paralysis, ileus from adhesions, spasmodic contraction from peritonitic reflexes, and vicious circle after gastroenterostomy. (See Gastric Atony, Acute.) *Grosser.* 305

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Infections, Local. TREATMENT. Following summary of serviceable measures present: *A.* Inflammations with slight serum exudation, but with redness, heat, swelling, pain, and loss of function: 1. Rest. 2. Elevation. 3. Hot, wet dressing.—*B.* Where much serum exudation, but slight tendency to necrosis: 1. Incision. 2. Place gauze in wound saturated with Chlumsky's solution. (Camphor, 60 parts; phenol, 30; alcohol, 10.) 3. Wet dressing; keep wet. 4. Remove gauze in twenty-four hours. 5. Insert rubber drain. 6. Apply wet dressing.—*C.* Where marked necrosis: 1. Incision. 2. Drainage. 3. Wet dressing. 4. After inflammation receded, Durante's solution. (Iodine, 1 part; potassium iodide, 10; guaiacol, 5; glycerin, to make 100.) 5. Dry dressing. *Hoag.* 307

Insanity. TREATMENT. Recovery in manic-depressive insanity may be hastened by stimulation of leucocytosis by injection

of 1 c.c. of terebene subcutaneously in the flank. *Jackson.* Page 236

Insolation. TREATMENT. 1. Ice packs or iced baths, for a few minutes at a time only, and to be discontinued when rectal temperature has reached 104° F. 2. Saline solution. If used by rectum, formula should be: Sodium chloride, 30 Gm.; sodium carbonate (crystallized), 20 Gm.; water, 1000 c.c. Introduction should last one hour. If used intravenously: Sodium chloride, 14 Gm.; sodium carbonate, 10 Gm.; water, 1000 c.c. The salt solution should be made first and boiled, and the carbonate crystals then added. 3. Digitalis, only where the preceding fails to excite diuresis. 4. Later, for headache: Acetanilide, acetphenetidin, or salicylates, with due caution. 5. For sleeplessness: bromides, trional, etc. 6. In apyrexial heat exhaustion, ice packs or baths are uncalled for, but saline solution should be administered, and combined with friction, massage, warm packs, and sufficient internal stimulant medication. *Woolley.* 548

Insomnia. TREATMENT. In nervous fatigue (neurasthenia) this symptom is best met by cold pack or dripping-sheet at bedtime, or by the trunk compress, consisting of a coarse linen bandage wrung out of water at 65° F. and covered by several layers of same material to exclude air; it should be worn all night. Excellent also is the neutral bath at 94° to 96° F. for from twenty to sixty minutes. *Pope.* 50

Intertrigo. TREATMENT. Paint picric acid solution on surfaces and separate them with thin layers of absorbent cotton. In the more severely infected cases wet dressings of picric acid. Prompt results. *Wilcox.* 176

Intestinal Motor Inactivity. TREATMENT. Pituitary extract recommended. Injection of 3 c.c. in adults causes evacuation in 88 per cent. of cases in from six to twenty minutes. Usually constipation later recurs, but often a single injection will induce several stools on same day and keep bowels regular for a day or two after. The extract is valuable for prophylaxis and cure of postoperative intestinal paresis. Continued, it tones up intestine and also stimulates stomach motility. For lasting effect, inject ½ c.c. intramuscularly every day for a week, then 1 c.c. every three days for another week, and thereafter 1½ c.c. once weekly. *Houssay and Beruti.* 27

Intestinal Stasis, Postoperative. PROPHYLAXIS. Harmful effects of abrasion of visceral peritoneum in operations can be overcome by introducing 6 ounces (180 c.c.) of sterilized mineral oil in abdomen and sponging it over coils of intestine. *Burrows.* 52

Iodine Poisoning. TREATMENT. Calcium lactate internally found useful in 2 cases of iodine poisoning from a course of potassium iodide. *Von den Velden.* 418

Lumbago. TREATMENT. Salicyl compounds or a 10- or 20-grain (0.6 or 1.2 Gm.) dose of quinine at onset of condition useful. Rochelle salts, ½ to 1 dram (2 to 4 Gm.) every hour or two until urine alkaline and bowels freely moved, also valuable. "Walking the lumbago off" may succeed if free perspiration accompanies the exercise. Turkish bath in early stage safer and more effective. Later: Rest, dry cups locally, deep massage, faradic current, and, if salicylates fail, iodine, in vegetable protein combination. *Henry.* 175

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Gold and potassium cyanide injected intravenously in 12 cases. Single dose, 0.01 to 0.05 Gm. Results good. Course of 12 to 14 injections followed by interval of two to three weeks, after which another treatment given. Even in severe cases, therapeutic results better than with tuberculin and other measures. *Poór.* 236

Lymphosarcoma. TREATMENT. Case with growth beneath sternomastoid muscle, recurring after removal, in which injections of Coley's fluid, chiefly into the swelling itself, caused the latter to disappear, with no evidence of recurrence one year later. Initial dose was ½ minim (0.03 c.c.), gradually increased for three weeks, an injection being given daily, until 10 minims (0.6 c.c.) was reached. This was continued two more weeks, and later another course of injections, on alternate days for a month, was given. *Spencer.* 549

Keratitis, Traumatic Exfoliative. TREATMENT. In the author's case the conjunctival sac was rendered anesthetic and douched with normal saline solution. With a Bowman discission needle several oblique punctures were made into the anterior chamber at and around the seat of trauma; before withdrawing the needle it was turned at right angles on itself to allow the antibody-containing aqueous to escape slowly. This, with the use of weak hydrogen dioxide lotion and 2 per cent. chloretone in parolene drops, proved sufficient to cure and prevent relapses. *Harry.* 618

Malaria. TREATMENT. In all cases the blood can be sterilized of plasmodia by giving 30 grains (2 Gm.) of quinine daily for three days, followed by 30 grains on the same day of the week on which the last of the three days fell, for a period of six weeks. The sulphate should be used; its solution should be effected in the stomach, either by exciting the flow of gastric juice or giving a little

hydrochloric acid. Where life depends upon immediate introduction of quinine—in comatose or cerebral forms chiefly—a soluble salt, usually the hydrochloride, should be given intravenously, well diluted with salt solution, in doses of 10 grains (0.6 Gm.), which will kill as many plasmodia as any larger dose. The drug need not be injected oftener than every eight hours. The intravenous route should be used until the drug can be given by mouth. *Bass.* Page 550

In malaria in infancy the following treatment is of value: (1) Cold baths to reduce the temperature, if practicable, and if not, hot ones. (2) Small doses of heroine and atropine, or morphine (guardedly) and atropine to control the convulsions. (3) A mixture of calomel and mercury with chalk, followed by plenty of castor oil, as hot as can be given. (4) Quinine, by the mouth in some syrup or as euquinine; by inunction in the form of the soluble salts dissolved in alcohol or glycerin, or, preferably, by hypodermic injections of the quinine and urea salt. (5) After acute symptoms have subsided, iron and essence of pepsin. *Booth.* 608

Mammary Abscess. PROPHYLAXIS. Threatened mammary abscess underwent absorption in 2 or 3 cases soon after administration of pituitary extract. *White.* 283

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Nasal Catarrh, Chronic. TREATMENT. Lavage with a solution of powdered boric acid, sodium bicarbonate, and sodium chloride in equal parts (with a little menthol added), 1 teaspoonful to a pint of tepid water, recommended. A ball-syringe should be gently used in carrying out the measure. Where local dryness is marked, the following oily spray is useful: Menthol, gr. v (0.3 Gm.); camphor, gr. ij (0.12 Gm.); oil of eucalyptus, ♏iij (0.2 c.c.), and oil of sweet almonds, enough to make f℥j (30 c.c.). *Wilson.* 484

Nephritis. TREATMENT. Case of chronic interstitial nephritis, already in uremic convulsions, in which renal decapsulation was performed. A narrow strip of capsule, about ¾ inch wide, was left on each side of the renal pelvis to form a cradle; for the suspension of the kidney a strong ligature was passed twice through each tag, the ends being carried through the adjacent muscles. The patient made an uneventful recovery; one year later he had gained 34 pounds and the urine showed no casts, albumin, or cells. *Lynch.* 545

Neuralgia. TREATMENT. Carbon disulphide, applied locally for fifteen seconds, often promptly relieves neuralgias, headaches, and nearly all local pains. *Seelye.* 542

Night-sweats. TREATMENT. Better results are obtained in the night-sweats of tuberculosis with aromatic sulphuric acid than with either agaricin or atropine. *Adams.* 552

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation, in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Osteomalacia. TREATMENT. Case in which excellent results obtained from epinephrin, injected in doses of 8 minims (0.5 c.c.) of 1:1000 solution, daily, in 2 series of 9 injections each. Patient finally discharged cured. *V. Salis.* 278

Ozena. TREATMENT. Use of sugar recommended. For first week or two surgeon should carry out treatment himself, and precede sugar by removal of crusts from nose, softening them if necessary with hydrogen dioxide or sodium bicarbonate solution. Patient to use nasal syringe once daily. After crust removal, massage mucosa with cotton-tipped probe; then nostrils may be packed with ribbon gauze soaked in simple syrup, to be removed in twelve hours. Repeat this treatment on alternate days. After a fortnight patient can insufflate powdered sugar himself. *Harry.* 175

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Pericarditis, Adhesive. DIAGNOSIS. Retraction of the chest wall circumscribed along the left costal arch between the parasternal and anterior axillary lines, and with pulsation, is pathognomonic. To examine for retraction one should lay one hand on the lower part of the sternum and the other on the spine opposite; the patient then taking a deep breath, the chest is felt to grow narrower and a distinct systolic retraction perceived. Preference of edema for the upper part of the body, as well as the paradoxic engorgement of the neck veins during inspiration, are also characteristic. *Tornai.* 424

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Peritonitis, Tuberculous. TREATMENT. Operative treatment in 31 cases (27 adults) yielded improvement, usually very marked, in all but 4 cases. An incision 3 to 4 inches long was made through the sheath of the right rectus and the patient eviscerated in so far as possible, the intestines being caught in a nest of hot, moist towels and thoroughly washed with a solution of 50 per

cent. commercial hydrogen dioxide. The abdominal cavity was then thoroughly flushed with the same solution, after which it was washed with equal thoroughness with normal saline solution, as were also the intestines. The latter were then replaced and the wound closed with 3 layers of sutures. Primary union followed in every case. The patient must be got out of bed and about as soon as possible. *Judd.* 618

Injections of nitrogen into the peritoneal cavity in a case rebellious to laparotomy, X-rays and inunctions brought about rapid improvement and eventual cure. Four injections were given, of 500, 600, 800, and 600 c.c. respectively. *Brückner.* Page 619

Phlebitis, Chronic. TREATMENT. Local alternate hot and cold submersions and spray advised. Two tubs or pails are used, one containing cold water and the other water at 110° F. The affected limb is first submerged in the hot water for thirty seconds, then in the cold for fifteen seconds. This alternation is gone through 10 times, ending with the cold-water submersion. The part is then gently rubbed until the skin is dry and red, showing proper reaction. Gentle stroke massage in the direction of the venous flow is then to be carried out for ten minutes, the skin dusted with talcum powder, and an elastic support applied. The spray method (spraying with sponges of hot and cold water or a nozzle-spray attachment), applied for the same length of time, is useful to treat the upper parts that cannot be submerged. *Foster.* 424

Placenta Previa. TREATMENT. In marginal variety, inject 30 minims (2 c.c.) of pituglandol and at once rupture membranes. In central variety, according to extent of dilatation, perform version or introduce metreurynter and give pituglandol. Metreurynter generally expelled spontaneously in one-half hour. Then perform version and give second dose of pituglandol. *Gall.* 280

Pleurisy. TREATMENT. Autoserotherapy recommended in all cases of serofibrinous pleurisy in which pyemic infection is absent. A positive cure may be expected in over 80 per cent. of cases. In large effusions causing severe dyspnea and pain one should aspirate 10 to 200 c.c. of fluid and, before withdrawing the needle entirely, reinject 2 to 3 c.c. under the skin. Immediate relief from symptoms and a more rapid absorption of the exudate will follow. The injections should be repeated every other day until decided improvement takes place. *Pfender.* 417

Use of calcium lactate internally in pleurisy is indicated only when the effusion constantly recurs after puncture. *Von den Velden.* 418

Injections of 1:1000 epinephrin hydrochloride solution made into the pleural cavity in 20 cases, with constantly very favorable results. The amount injected was at first 0.3 c.c. (5 minims), and on the four or five succeeding days 0.2 c.c. (3.3 minims), in saline. Temperature began to descend on the third day, and the effusion underwent rapid absorption. *Wedensky.* 534

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.*, daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Vaccine treatment advised. First give polyvalent stock vaccine of pneumococcus and streptococcus, of each, 30 million, as soon as possible. Make sputum smears and cultures, blood-cultures in early cases, lung puncture in late ones, and prepare autogenous vaccine. If no definite response in twenty-four to forty-eight hours, repeat or preferably give autogenous vaccine. If still no response in thirty-six or forty-eight hours, double the dose. If there is response, as shown by improved clinical symptoms and signs, increased well-being, etc., defer reinoculation three days, or until the first symptoms of retrogression in general condition or physical signs occur. Maintain the dosage or increase it every two or three days until the patient entirely well. Generally about three doses are necessary. Average mortality with vaccine treatment only 5 to 10 per cent. Convalescence shortened and danger of complications lessened. In severe cases also give 20 to 30 grains of sodium citrate every two or three hours. *Craig.* 238

Epinephrin, 8 minims (0.5 c.c.) of 1:1000 solution in 1 pint (500 c.c.) of saline solution subcutaneously, caused prompt improvement in a desperate case. *Lonhard.* 281

Camphor-injection treatment recommended. A 30 per cent. preparation of camphor in oil of sesame, sterilized in a boiling water bath, should be used. As soon after the initial chill as possible, 2½ fluidrams (10 c.c.) of the preparation per 100 pounds of body weight should be injected hypodermically every twelve hours except in bilateral pneumonia and in severe toxemia, when injections should be made every six to eight hours. The site of injection should be the outer thigh or abdomen. The injection should be made slowly and the oil gradually deposited below the subcutaneous fatty tissue and not into it. *Cruikshank.* 426

Poliomyelitis, Acute. DIAGNOSIS. Preparalytic symptom: A peculiar, twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to somewhat less than a minute. Usually affects part or whole of one or more limbs, face, or jaw, but sometimes whole body. Duration of spells short at first. Often accompanied by a cry similar to

hydrocephalic, or by brief period of unconsciousness. *Colliver.* Page 177

Polycythemia. TREATMENT. Report of a case in which the symptoms were greatly bettered by use of benzol, beginning with 1 Gm. (15 minims) *t. i. d.* of an emulsion containing 25 per cent. of benzol and of olive oil and 50 per cent. of acacia mucilage, and increasing up to 4 Gm. (1 dram) *t. i. d.* The red cells fell from 9 or 10 to 5 million, and the whites from 26,000 to 9500 during the year of treatment. *McLester.* 611

Pruritus Vulvæ. TREATMENT. In 2 cases of this condition associated with the menopause the itching was with great promptness relieved by internal administration of an extract of the corpora lutea of pregnant cows. *Dannreuther.* 520

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Low nitrogen diet found to have very favorable influence upon psoriasis eruption, especially when extensive. Severe cases improve under such a diet almost to the point of disappearance of the eruption. *Schamberg, Kolmer, Ringer, and Raiziss.* 178

Application of picric acid solution brings immediate and constant relief from itching. *Wilcox.* 176

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* 53

Puerperal Sepsis. TREATMENT. Fixation abscess recommended in this and other severe infectious states, including pneumonia, appendicitis, typhoid fever, etc., whenever condition seems to be taking a turn for the worse. Inject 2 c.c. of pure oil of turpentine under gluteal skin. When abscess forms, evacuate through small incision (do not drain) and apply Bier cups twice daily. Excellent results in 18 cases. *De Lostalot.* 168

Abstention from curettage in cases of sapremia advised. Instead, one should dilate cervix, using first a dressing forceps, then a small dilator, and lastly a large dilator. After this, strips of gauze should be soaked in a 50 per cent. dilution of tincture of iodine. One strip is to be introduced into the uterus with a uterine sound, left about a minute, and then replaced by another. As a rule, from 5 to 8 strips are thus used. When a drain is required, the last strip is left in the uterus, to be removed later in about eight hours. *Welton.* 487

In the septicemic form, local disinfection of the genital canal is the first measure requisite. If temperature does not subside, or rises again, intrauterine douching with the following solution is advised: Tincture of iodine 2 fluidrams (8 c.c.); 95 per cent. alcohol, 8 fluidounces (240 c.c.), and sterile water, enough to make 2 quarts (liters). Once daily is sufficient. If a sharp rise in temperature follows, local disinfection should cease. An easily digested, largely liquid diet is indicated. Enteroclysis and serum treatment are at times useful. Continual septic symptoms plus an abdominal mass, palpable above the symphysis or Poupart's ligament, call for laparotomy. *Hirst.* 490

Pyloric Spasm. TREATMENT. Atropine in a certain proportion of cases brings relief. The author found that epinephrin hypodermically procures complete and lasting relief in most instances. In 2 cases the palpable pyloric tumor could be felt to melt away under its influence. Prolonged gastric lavage, using water at 105° F., also has a happy effect in relieving spasmodic stomach conditions. *Stockton.* 367

Pyorrhea Alveolaris. TREATMENT. Sensitized vaccine against streptococcus, staphylococcus, pneumococcus, and bacillus of Friedländer used in a number of cases. After 2 injections, mechanical and dental treatment added. After 4 or 5 injections, teeth clean and firm, and organisms gone. Three or four supplementary injections given. No recurrence in six months. *Bertrand and Valadier.* 304

Rabies. TREATMENT. Potassium iodide in 2 per cent. solution, 1 tablespoonful or dessertspoonful at frequent intervals throughout course of preventive injections, recommended as adjuvant in treatment. In 3 cases of abortive rabies symptoms promptly disappeared after use of potassium iodide. Advocated especially in cases where infection has existed in latent condition for some time. *Koch.* 55

Rachitis. TREATMENT. Pituitary extract given to 16 young children with rickets, and effects compared with controls. After a few weeks of pituitary, the children were able to stand and began to walk; fontanelles began to close and growth of teeth was considerably accelerated. Osseous tenderness gradually diminished, weight was gained, and musculature became firmer. *Weiss.* 218

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intra-

muscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* Page 91

Rheumatism, Acute. TREATMENT. Intravenous use of sodium salicylate resorted to in 12 cases, 130 injections in arm veins being given in all. A very fine, sharp needle should be used. The solution is made by dissolving 10 Gm. of C. P. crystalline sodium salicylate in 50 c.c. of distilled water freshly sterilized by boiling. Each cubic centimeter contains 3 grains (0.2 Gm.) of the salicylate. Usually the dose was 15 or 20 grains (1 or 1.25 Gm.) and injections were given at twelve- or eight- hour intervals over a period of three to six days. Occasionally, in robust men, 30 grains (2 Gm.) were given, and as much as 120 grains (8 Gm.) in the first twenty-four hours, without unpleasant effects. Relief of pain was prompter and more pronounced than from oral administration. The method is indicated in patients unable to retain the drug by mouth; those who show little or no response to the usual method; to start the treatment with a few intravenous injections where pain is intense, and in cases with threatening heart complications, or in severe rheumatic affections of the eye. *Conner.* 428

Ringworm. TREATMENT. Body ringworm more easily controlled by painting on picric acid solution than by usual antiseptic ointment. *Wilcox.* 176

Wash part with a strong solution of sodium bicarbonate, swab with a mixture of 1 part of ether to 2 parts of alcohol, dry, paint with a 2.5 per cent. tincture of iodine, and apply immediately an ethyl chloride spray until the skin gets china white. In twenty-four to forty-eight hours the patch of ringworm will have become quiescent. Next tiny spots should be looked for and similarly treated. In ringworm of the scalp 3 or 4 applications of iodine and spray are required, but on the face or smooth surfaces 1 application suffices. *Foley.* 429

Sarcoma. TREATMENT. Sarcomata, if taken early, before dissemination, do very well under radium treatment. The burying of tubes of radium salts within the growth should be resorted to whenever practicable. *Pinch.* 612

Scarlet Fever. TREATMENT. Iodine ointment used locally in 19 cases (see Diphtheria). These cases were unusually free from local complications. *Thomas.* 364

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Scorbutus. TREATMENT. Calcium lactate, 45 grains (3 Gm.) a day, found a valuable measure. *Von den Velden.* 418

Shoulder Dislocation, Recurrent. TREATMENT. New posterior method of capsulorrhaphy described. An incision 4 or 5 inches long is made posterior to the axillary vessels, with its center over the humeral head. The tendon of the latissimus dorsi is exposed, and above it is the subcapularis. The capsule is aproached through the interspace between these muscles, and the necessary suture can be readily done. Care must be taken to identify the circumflex nerve and vessels. The advantages of this operation over the anterior one are numerous. *Thomas.* 615

Sinusitis, Frontal. TREATMENT. In a number of acute cases marked relief was noted—because of the free rhinorrhea set up—from the intranasal use of the following solution: Mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces). *Macfarlan.* 554

Skin-grafting. Following method of dressing skin-grafts just after their application described: Strips of gauze, 6 to 8 layers in thickness, are thoroughly impregnated and buttered with sterile 33⅓ per cent. bismuth paste (Beck's paste). These are laid over the grafts smoothly for 2 or more inches beyond the wound. No wrinkles or folds should remain. Over these is placed a layer of absorbent cotton, and the whole he'd firmly by a roller bandage. The first dressing should be done on the fifth day, great care being exercised in the removal of the primary dressing. A similar dressing is reapplied and subsequent dressings done every third or fourth day as required. At about the fifth dressing one can peel from each graft a thin film of dead cuticle, leaving a firm, pink, healthy graft in position. *Coerr.* 358

Spasmophilia in Children. TREATMENT. Combined treatment with phosphorized cod-liver oil and milk curds from which the whey had been removed by washing with water (thus removing all mineral salts) was employed in 12 cases. A cure was obtained in 9 cases within a week, twice at the end of the second, and once in the fourth week. There was loss of weight, but this was soon made up on return to full milk diet. *Bernheim-Karrer.* 368

Syphilis. DIAGNOSIS. Luetin test valuable as diagnostic measure in tertiary and latent stages of syphilis, indicating a state of hypersensitiveness to spirochetal proteins induced by a period of cessation of introduction of these proteins previous to the test. Provocative injection of salvarsan, followed by both Wassermann and luetin tests, suggested to ascertain whether treatment has been curative in a given case. *Foster.* 179

Diminution in the bone conduction of sound, with otherwise normal hearing, is one of the earliest signs of constitutional syphilis. A tuning fork is struck and placed on the patient's mastoid process. When he no longer hears it, it is placed upon the physician's mastoid. If it is still audible to him, the test is positive, provided the patient's hearing was otherwise acute. The sign is positive also in brain tumors, hydrocephalus, epilepsy, and tetany. *Beck.* Page 491

TREATMENT. Epinephrin, 15 to 20 drops of 1:1000 solution in a little water by mouth, advised ten to fifteen minutes before injection of neosalvarsan, to prevent "nitritoid" symptoms, arising in some patients from the latter, *e.g.,* facial congestion, tingling in throat, nausea, and vomiting. *Galliot.* 212

Tetanus. TREATMENT. Case of tetanus in which, after the original wound and scar has been excised and pure phenol applied, subcutaneous injection of phenol was started, 1 fluidounce of a 1 per cent. solution being given. The strength of the solution was raised to 3 per cent. The groins and right axilla were treated alternately. Chloroform was administered at each injection owing to the spasms produced by the needle-prick. The urine retained its normal color throughout. No antitetanic serum was given. Recovery followed. *Reynolds.* 556

Tonsillitis, Ulcerative. TREATMENT. After thoroughly washing surfaces and crypts, apply 10 per cent. silver nitrate solution over ulcerated surface and carry down into crypts as well. Then dust thymol iodide with powder blower over gland and throw it into diseased lacunæ. Where tonsils seat of recurring inflammation, but patient objects to removal, use electric cautery. Selecting 3 or 4 crypts at a time, apply 10 per cent. cocaine solution to interior of each with fine-pointed cotton applicator. When anesthesia sufficient, introduce curved electrode into each crypt and turn on sufficient current to produce a white heat before electrode removed. Patients thus treated are freed from further attacks. *Bishop.* 241

Tracheobronchial Glandular Enlargement. DIAGNOSIS. Percussion of thoracic vertebræ, especially those above level of inferior scapular angles, affords tonal changes of clinical value in this condition; these must always be correlated, however, with mural signs in the individual case. In comparison with other (neoplastic) mediastinal masses, tracheobronchial tumors affect vertebral percussion sound less, and oftener produce dullness than hyperresonance. *Da Costa, Jr.* 180

Trigger-finger. TREATMENT. Paint the part with iodine, insert a fine bistoury in the flexure crease, and, pressing the point down to the tendon, draw it along for ½ inch. Relief is instantaneous and final. A small pad of boric gauze may be applied to make pressure for two days. The tendon is easily located by thumb pressure at the crease. *Abbe.* 492

Tuberculosis. TREATMENT. Garlic, 1 fluidram (4 c.c.) of the expressed juice or 2 drops of the essential oil three times a day, recommended in all forms of tuberculosis. Externally, poultices of crushed garlic bulbs, 1 part, with 3 parts of lard, or garlic ointment (50 per cent. of the juice in petrolatum) are to be applied.

Mercury biniodide, $\frac{1}{30}$ grain three times a day internally, and unguentum hydrargyri externally, give the best results next to garlic. In cases of severe toxemia, where more active elimination is necessary, the following treatments give best results: (1) Normal saline, 220 c.c., at 106° F.; also of value in hemorrhagic cases, intravenously. (2) Guaiacol, 32 drops in 220 c.c. of sterile water, at 106° F., intravenously. (3) Mixture of sodium salicylate, guaiacol, and glycerin, of each, 32 grains or drops in 220 c.c. of sterile water, at 106° F., intravenously. (4) A 2 per cent. aqueous solution of pure phenol (Bacelli's treatment), 1- to 5- c.c. doses hypodermically or by Murphy's drip in 10-c.c. doses; the kidneys must be watched. Cases of continued septic temperature, not improving from the above, should be treated surgically. For making the soil unfavorable for the tubercle bacillus, phosphorus, $\frac{1}{1000}$ grain t. i. d., and Fowler's solution, 1 drop t. i. d., give the best results. *McDuffie.* 431

Tuberculosis, Articular. TREATMENT. X-rays found useful in bone and joint tuberculosis. Aluminum or thick leather shield to be used. Treatment not to be employed in children less than 5 years old, and in older children epiphyses should preferably be avoided. Best effects noted in cases with sinuses and secondary infection. Part exposed from all sides to an erythema-producing dose; three weeks then allowed to elapse before repetition. Joints healing under the rays show but little limitation of motion. Abscesses with skin about to yield should not be rayed, owing to danger of necrosis. *V. Schede.* 165

Tuberculosis, Laryngeal. TREATMENT. Scarlet red, 10 per cent. in a mixture of equal parts of sesame oil and petrolatum, applied twice daily in cases with laryngeal lesions, whether ulcerative or not. No unpleasant results. Prompt relief of pain in every case, tendency of ulcerations to heal, hoarseness improved, and, where only infiltrations and edema, swelling markedly less after a few weeks. *Hinman.* 306

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is

striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* Page 54

The X-rays will demonstrate much more accurately the extent of involvement than any other diagnostic agent. In determining the operability of a surgical condition in a patient suffering also with pulmonary tuberculosis, or in giving a prognosis in a known case of pulmonary tuberculosis, radiographic examination is essential. *Moore.* 367

TREATMENT. Frequency of gastric atony and dilatation, with resulting digestive symptoms and secondary toxic manifestations (aches and pains in chest and right hypochondrium, morning depression, insomnia, hepatic weight, vertigo, chilliness an hour after meals, fleeting edema, etc.), in pulmonary tuberculosis pointed out. Treatment: (1) Support to stomach and abdomen by Rose belt of plaster or moleskin, followed, upon improvement, by supporting belt to be worn continuously and later in daytime only. (2) No liquids with meals or for two to two and one-half hours after. (3) Lunch to be light. (4) Recumbency, with attempt to sleep for one-half to one hour after each meal. (5) No alcohol or fresh bread. (6) Medicinal treatment: Tr. nucis vomicæ, acidi hydrochlorici dil., āā f℥ss (15 c.c.); glyceriti pepsini, f℥iss (45 c.c.); aq. menthæ pip., q. s. ad f℥iij (90 c.c.). Teaspoonful in ½ glassful of water after meals. If much flatulence, add chloroform water, 2 or 3 minims (0.13 or 0.2 c.c.) to the dose, until relieved. (7) Cold shower or sponge baths, with needle bath to abdomen, followed by brisk rub, each morning. (8) Where mucous passages and flatus: Turkish towels, wrung out in hot water, to be applied to abdomen for one-half hour after meals. (9) Thorough mastication of food and abstention from worrying at meals. (10) Fats to be avoided at first. *F. N. Robinson.* 95

Measures to overcome fever described: (1) Where prolonged fever drains on patient's strength, pyramidon is drug to be preferred—5 grains (0.3 Gm.) in cachet at night, or, if necessary, three times a day. In neurotics bromides sometimes efficacious. (2) Rest in recumbency to be insisted on until temperature does not rise above 99° in men or 99.2° in women, when patient may sit in chair for two hours, then recline on couch, in open air if possible. Exercise then gradually increased. (3) Where severe cough, sedative mixture tends to prevent fever from the exertion and autoinoculation. (4) Where rest and drugs fail, cautious use of tuberculin (T. R. or B. E.), beginning with only $\frac{1}{100000}$ mg., exerts antipyretic action, though often only for short periods. Tuberculin acts best in cases free from fever while at rest, but febrile when exercise taken. *Wethered.* 120

Value of auscultation at acromion process in apical tuberculosis emphasized; it amplifies all auscultatory signs over apices. Of 28 cases in first stage, all showed acromial breathing. *Magida.* 239

Guaiacol administration, beginning with 5 minims (0.3 c.c.) three times daily, increasing by 2 minims (0.12 c.c.) a week up to 12 or 15 minims (0.75 to 1 c.c.), and continuing the drug for four months or longer, yielded highly satisfactory results. The drug should be taken immediately before food. The following formula was used: Guaiacolis, f℥j (4 c.c.); alcoholis, syrupi limonis, āā f℥j (30 c.c.); spiritus chloroformi, f℥ij (8 c.c.); aquæ, q. s. ad f℥vj (180 c.c.). One-half ounce three times daily. *Mayberry.* 366

Typhoid Fever. TREATMENT. Venesection found to yield marked benefit in a case of typhoid fever with severe infection in toxemia. Removal of 6 to 14 ounces cannot do harm and may be productive of much good in such cases. *Rudolph.* 494

Use of repeated doses of only 3 or 5 million organisms urged. The results appear to be as satisfactory as from larger doses. The culture used in 10 cases was ordinary prophylactic stock vaccine, diluted with freshly boiled water. *Kahn.* 619

Ulcer, Gastric. DIAGNOSIS. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* 114

TREATMENT. Cream diet used with success in 26 cases. One quart (4 glasses) a day yields 1800 calories. To this may be added 600 c.c. of milk or 6 slices of bread or 5 tablespoonfuls of oatmeal gruel or 3 eggs. Cream causes inhibition of gastric secretion. If not tolerated in full strength, it may be diluted with equal or greater amount of milk. Ice-cream a useful variant. Some marked cases progressed to good recovery in two or three months under cream diet. Method adapted for bed or ambulant treatment. Also useful as prophylactic against recurrence of ulcer. *Nichols.* 169

Ulcers. TREATMENT. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

In old leg ulcers and infected wounds a dressing of mercuric iodide, 1 Gm. (15

grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), is of value. *Macfarlan.* Page 554

Urticaria. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Vaccination. Tincture of iodine, applied to the vesicle as soon as possible after the latter has formed, and repeated two or three days later, either prevents pustule formation or so limits it that the several pustules formed do not coalesce. The vesicles soon dry up and form a small scab. In not one of 116 cases so treated was there secondary infection with pus-producing bacteria, whereas in those not so treated about 30 per cent. were secondarily infected. There is no interference with the immunizing process. The scab should be kept covered with sterile gauze for several weeks. In cases of secondary infection with pus formation best results are obtained by removing the scab and pus, painting the base with tincture of iodine, and, when dry, covering with bismuth subiodide powder. Superfluous granulation tissue should be treated with a stick of silver nitrate. *Albert and Alden.* 369

Vomiting. TREATMENT. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Carbon disulphide, applied for fifteen seconds over the epigastrium, will produce the same effect as counterirritation with a strong mustard plaster for half an hour. *Seelye.* 542

Vomiting of Pregnancy. TREATMENT. Apomorphine, 1/36 grain (0.0018 Gm.) in a teaspoonful of water, found effectual in a severe case; likewise in other cases of vomiting or nausea. *Field.* 182

Thyroidin in 1½-grain (0.1 Gm.) tabloids given in several cases, with complete curative effect. *Koreck.* 284

Brilliant results obtained in some cases by administration of thyroid preparations. *Walker.* 409

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1:1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received 1/3 c.c. as initial dose and 2/3 c.c. four days later; others, ½ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a bronchopneumonia as complication, a mixed vaccine should be used. *Davidson.* 118

Silver nitrate in 2 per cent. solution applied to throat in 95 early cases to prevent spread of infection downward from pharynx. Useful results in 84 instances. Mucus secretion prevented and coughing spells due to irritation by secretion minimized. Silver solution applied every day at first; later, and in older children throughout, on alternate days. *Ochsenius.* 182

Epinephrin, 3 minims (0.2 c.c.) of 1:1000 solution, given every four hours in case in a child 7 years old, ill six weeks. Paroxysms markedly reduced almost at once. Drug then continued 3 times a day for three weeks more. *Lord.* 280

Wounds. TREATMENT. Stream of air from ordinary electric fan or register found useful in drying and promoting healing in large wounds, obstinate leg ulcers, and discharging eczema. *Heisler.* 182

Mixture of saturated magnesium sulphate solution and glycerin in equal parts recommended for dressing infected wounds. *Freese.* 304

Following summary presented: *A. Incised wounds:* 1. Paint with iodine. 2. Shave dry. 3. Tie all bleeding points. 4. Remove foreign substances. 5. Suture all tendons and nerves. 6. Again apply iodine in and around wound. 7. Suture wound. 8. Apply dry sterile dressing.—*B. Lacerated wounds:* 1, 2, 3, 4, 5, same as in *A.* 6. Cut away all damaged tissue. 7. Again apply iodine. 8. Suture wound.—*C. Punctured wounds:* 1, 2, same as in *A.* 3. Enlarge opening for drainage. 4. Insert rubber drain. 5. Alcohol dressing. 6. Tetanus antitoxin.—*D. Gunshot or bullet wounds:* 1, 2, same as in *A.* 3. If much bleeding, enlarge opening and tie vessels. 4. If nerve injured, suture nerve. 5. Close wound. 6. Alcohol dressing. 7. Tetanus antitoxin. *Hoag.* 307

Book Reviews

A HANDBOOK OF PSYCHOLOGY AND MENTAL DISEASE. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital (Flint, Mich.) for Mental and Nervous Diseases; Formerly Medical Superintendent of the Eastern Michigan Asylum; Member of the American Medico- Psychological Association, etc. Fourth Edition, Revised and Enlarged. Pages 235, with Illustrations. Philadelphia: F. A. Davis Company, 1914. Cloth, $1.50, net.

This book is intended both as a ready reference work for the practitioner, a concise textbook on psychiatry for the medical students, and for use in training schools for attendants and nurses in asylums. That its fourth edition is now appearing is evidence that it has proven useful. The book is divided into five parts: Part I is on psychology in general, including a discussion of the processes of thinking, the localization of function in the brain, feeling and emotion, volition, and abnormal mental manifestations. Part II is a brief section on symbolism in sanity and insanity, word association and obsession. Part III occupies about one-half the book and takes up the various recognized mental disorders, including sections on diagnosis and treatment. Part IV is a discussion of the management of cases of insanity from the medical standpoint, and is sufficiently circumstantial to be of marked practical value. In Part V is considered the management of cases of insanity from the nursing standpoint. Part II is new in this edition. Part IV has been amplified and improved. Studies of certain paranoid and hysterical states, based on Freud's researches, have been introduced and a more detailed description of symptoms and symptom groups given. On the whole, the work may be considered a good, concise, simply worded, and practical exposition of modern psychiatric practice.

Infant Feeding. By Clifford G. Grulee, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College; Chief of the Pediatric Staff, Cook County Hospital. Second Edition, Thoroughly Revised. Octavo of 314 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.00, net.

Since the first edition of this book appeared two years ago, no new scientific facts have come to light which would revolutionize our ideas on the subject of infant feeding, although there has been a gradual accumulation of useful or potentially significant data. These the author has embodied in the new edition, without disturbing greatly the original text. Among the new material introduced are recent X-ray observations relating to the physiology of the infantile gastrointestinal tract, nitrogen metabolism in early infancy, the value of dextrin in infant foods, calcium metabolism in infants, the constituents of colostrum, the composition of kefir, etc. As before, the work takes into account all recent scientific laboratory work; and the therapeutic recommendations, as well as the advice concerning infant feeding, are based on reliable clinical researches reported from various countries, together with the author's personal experience. While the discussions on pathogenesis are, perhaps, unnecessarily lengthy and abstruse from the standpoint of the general practitioner, the practical aspects of the subject including diagnosis and treatment are given due consideration and with less emphasis on ultra-scientific procedures such as the exact percentage and caloric methods of feeding, the measures recommended being, therefore, not over-difficult of application. The Czerny-Finkelstein-Keller classification of the alimentary disturbances of infancy is adhered to. The book can, as before, be recommended without reserve.

Taschenbuch der Magen- und Darm-krankheiten. Von Dr. Walter Wolff, Oberarzt der inneren Abteilung am Augusta-Hospital, Berlin. Pp. 163, with 13 Text Illustrations and 1 Colored Plate. Berlin and Vienna: Urban & Schwarzenberg. New York: Rebman Company.

This little work, introduced by Ewald, aims to present in a concise form the various diagnostic methods and therapeutic procedures employed in the Augusta Hospital of Berlin. All the methods described are considered by the author readily available to the general practitioner and amply deserving of his attention. The difficulties of the more essential procedures in modern laboratory diagnostic technique are, in general, overestimated by the rank and file practitioner, and it is for the use of the latter that the author's simple and readily understood little volume has been written. All the more common affections of the stomach, intestine, and esophagus are considered. Some short sections on the examination of the liver and pancreas and their functions have also been introduced for purposes of differential diagnosis. The colored plate contains two unusually good microscopic views of the stomach contents, which will permit of ready recognition of the various bacterial and other cells met under normal or abnormal conditions in this situation.

The General Field

Conducted by A. G. CRANDALL

Where the Cruelty Laws Should be Invoked

Because of the various exigencies of life's battle, it seems to have become necessary for a considerable number of men and women to secure their livelihood by posing as models for American art.

Now this is quite a prosperous country taking one year with another, and there are a good many of the sons and daughters of well-to-do families who, looking with disdain upon vulgar trade, feel the throb of the divine spark of genius and decide to make their names go down through the ages with Michael Angelo, Leonardo Da Vinci and Charles D. Gibson.

Equipped with a letter of introduction from the local photographer the budding genius is quite prone to dally a few months, at least, in the Bohemian atmosphere of Manhattan, before establishing himself or herself for "serious work" in the Quartier Latin of Paris, Having abundant means at their disposal they establish the temporary studio, and then call for a satisfactory model. The real ingenue female model being scarce and the sophisticated one being inclined to be sarcastic, after a time the genius aforesaid resolves to paint something serious, instead of merely ornamental, and hires a male model.

Now the serious business begins. The model, suitably adorned with artificial whiskers and resplendent robes, begins his arduous labors. Imagine to yourself the normal man posing for hours for some talented Miss of Oshkosh, who was a perfect prodigy at 6 years in drawing pictures of pigs. This is when the model who, after numerous sittings, inspects the result upon the canvass, feels the iron enter into his soul.

Victor Hugo has described as no one else has, the possible humiliations of mankind, but he was fortunately deprived of a knowledge of some of the cruelties of 1914.

* * *

The "Efficiency" Fakir

A writer on business methods for a weekly journal of large circulation, devotes much costly space to picturing out a hypothetical situation, where at the dances and other functions, the town boys would so bedazzle the farmers' daughters, that they would promptly ignore their rural escorts, as long as the town youth was in evidence. The writer procedes to tell how he so impressed the substantial business men of the town with the bad business effects of these social customs, that they put an end to the raids, with great resulting benefits to local trade.

The public appetite is beginning to pall on these highly theoretical fables, which don't even have the merit of slang. Slurring the farmer is supposed to have been tabooed editorially about fifteen years ago. This writer seems to be reflecting on the farmers' daughter, as it is a pretty cheap kind of a girl who will not at least play fair with her escort. Such contributions are about as reliable in their

diagnosis of social conditions as they are helpful from the business standpoint.

Physicians have themselves suffered much from the intrusion of dreamers and theorists, who in the seclusion of their cheap lodging houses, evolve brilliant conceptions of how the business end of the doctor's professional routine should be conducted. The hypothetical figures conspicuously in all these concoctions.

* * *

Widening the Breach

Those sensitive souls who constantly bemoan the legislative cruelties which have been practiced upon the poor railroads should take heart. Only a hint from that scintillating genius of finance, Louis Brandeis, was necessary, and a group of Eastern railroads, some of which, even in hard times pay large dividends on their capital stock, have arranged to advance their passenger rates.

All the railroads ask for is to be let alone and they will do the rest; and we know from past experience what that is. Numerous other enterprises would greatly enjoy being left alone, but the public interest will not permit it. Neither will the public interest allow railroads to follow their natural wishes. The ability to pile up a large surplus, besides paying big dividends, is but to invite raids by a certain eminently respectable class of financiers. Had the New Haven road been compelled to deal fairly with the public and been content to make fair earnings on its capital stock, a large number of small investors would now be assured of getting some return on those stock certificates which they painstakingly accumulated as a certain barrier against need.

The raising of the passenger fares in the congested Eastern States is wholly without justification, and will arouse public resentment, a very unfortunate kind of asset, of which the railroads by this time should possess some working knowledge.

* * *

Made in America

Now is the time when the magic of the European label is losing its hypnotic influence and American manufacturers are beginning to find an efficient substitute for those imported from abroad.

A man had a prescription containing ichthyol. He mentioned to the prescription clerk the name of the principal ingredient. "I hope it don't call for much," the clerk remarked.

Now if ichthyol fails to be obtainable, what next? There is the good old reliable St. Jacob's oil, of generations ago, then made in America and which probably is yet, and supposed to contain genuine goose grease, calculated when suitably applied to penetrate and soothe the aggrieved tissues, from infancy to old age. Why not help the goose industry and soothe the muscle strain occasioned by the "goose step."

Of course there will be no lack in Paris millinery and feminine costumes. Every general store seems to have received a ship load of these goods about thirty minutes before the war broke out. But the men will have to content themselves with labels chiefly, whether the goods they order are dry or "wet."

* * *

Sauer Kraut

This is the season when every prudent Pennsylvania family with a

truck patch busies itself in laying away a goodly store of sauer kraut.

There are numerous inhabitants of this broad land that seem to exhibit a snobbish attitude toward sauer kraut, and broadly hint that all persons cannot digest this delicacy, and that the law should require that it be cooked out of doors to prevent possible asphyxiation. This is a vile slander. Now that meat is reported at $1.00 a pound in certain European cities, and about half that in some American cities, every doctor should revise his diet list, and include therein sauer kraut.

The well known author, Dr. Arnold Lorand, tells in one of his books how sauer kraut should be prepared, and also describes its physiological action. When properly made into sauer kraut the sugar contained in the cabbage changes to lactic acid, thus producing the desired disinfecting influence in the intestines. Thus the succulent cabbage assumes its most benign characteristics only in the form of sauer kraut.

A practical knowledge of cookery is an asset of considerable importance to physicians and it is evident that they ought to be thoroughly up to date on sauer kraut.

Dr. Lorand says that sauer kraut is more digestible when warmed over a day or two after it is cooked .

* * *

A Question Hard to Settle

A well known popular magazine has been conducting a discussion of the liquor traffic. Many very ingenuous arguments have been put forth on both sides.

Examples are often given by communities supposed to be dominated by strict prohibition laws, in which the blind tigers and speak-easies are numerous. Such evidence of course tends to prove that no law adverse to public sentiment can be enforced.

The supposed local option law, while regarded by many as a distinct step down from prohibition, nevertheless provides in its operation perhaps the strongest possible argument in favor of prohibition. A small town or city in local option territory in which the vote alternates from year to year, for saloons and against saloons, furnishes a comparison of the economic results of these changes which is not lost upon surrounding communities. That the introduction of saloons in a town or city previously without saloons, brings demoralization and business decline is usually so readily apparent, as to convince practically all reasonably sane voters.

That the practical control of the liquor traffic is the great economic question in this country today cannot be questioned.

* * *

Autocracy

Since the recent unpleasantness abroad the term autocracy, heretofore used chiefly by high brows, has become very common. Most any newsboy or bootblack can now explain the meaning of the word autocracy.

We felicitate ourselves that we are not subject to autocracy, and it is a great consolation—in theory. Yet there are a few little items of daily experience which somehow, under the analysis, seem to suggest this state of affairs.

An autocrat is a person who exercises an unquestioned authority. Such being the case, what about the political boss, whose orders are

accepted with a knowledge that to rebel would mean to lose all chance of preferment, and be cast into the outer political darkness.

Then there are various coal, food and oil barons; has anything tangible come out of opposition to their demands?

And there is another form of autocracy which prevails in this land of the so-called liberty, which calls forth jeers of derision from other countries. The American husband is notoriously henpecked.

Thus, it can be seen by only a few minutes reflection, that the American male citizen, now pushing out his chest and boasting of his freedom, gets his full share of bossing.

* * *

One Barbarous Phase of the War

If the current newspaper reports that severely wounded soldiers are allowed to lie without medical attention, day after day on the disputed territory between the two lines of entrenchments is true, it constitutes one excellent reason for a general protest from all neutral countries.

This is a reversion to the barbarism of the Middle Ages. In the more humane periods between mediæval times and the present collapse of civilization, consideration of humanity have permitted the suspension of hostilities temporarily until the severely wounded could be removed from the area of conflict.

While the sentimentalism of the American people may be regarded with contemptuous indifference by some at least of the combatants, and while considerations of national policy suggest a strictly neutral attitude in this country, there has been no hesitation on this side of the Atlantic in extending aid of the most practical nature to the Belgians. And the most ordinary motives of humanity should be sufficient to cause a mighty protest to go up from this country if, as reported, the severely wounded are allowed to lie day after day without attention until they die of hunger and thirst.

* * *

Very Poor Guides

A weather-wise person reports that we are going to have a very mild winter, because the squirrels instead of laboriously gathering together large stores of nuts, are giving themselves up to riotous living, making no provision for a cold season.

We are inclined to doubt whether to attribute too much wisdom to the squirrels. Our observation leads us to believe that the squirrels should never be taken too seriously. Even if a squirrel happens to lay up a supply of nuts in a hollow tree, the chances are that before the winter is fully over, some woodsman will come around and cut down the tree for firewood. Besides that there is the execellent chance that if the squirrel lays up nuts, some recent arrival from a foreign shore with a gun, will take away from him all necessity for the stores he has so laboriously laid by.

We doubt if the squirrels should be taken as a guide in weather prognostications. It is far better to stick to the old reliable goose-bone. The goose is a wise bird making the best of his environment at all times. With the goose there is something to build on.

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Department on the Internal Secretions

Original Articles and Summaries of Selected Articles

A DISCUSSION OF SOME FACTORS OF DISORDERS OF INTERNAL SECRETION IN CHILDREN.

BY TOM A. WILLIAMS, M.B., C.M., EDIN.,

Ex-President, Washington Society of Nervous and Mental Diseases; Corresp. Mem. Soc. de Neurol., Paris, etc.; Neurologist to Epiphany Dispensary and Freedmen's Hospital,

WASHINGTON, D. C.,

ALTHOUGH it is sometimes stated that no matter what gland product is given a backward child, there will be improvement in growth and mentality, whether the diagnosis is hyperthyroidia or the adiposo-genital syndrome, yet it will be dangerous to generalize from the few instances hitherto on record. For it must not be forgotten that the thyroid and hypophysis have some functions in common, and hence confusion between the two syndromes caused by their respective deficiency is apt to occur. Thus, I have now under observation a woman, thought to be myxedematous by so good an observer as Osler, 12 years ago, the progress of whose case shows a dyspituitarism so distinct as to give the picture of acromegaly, consisting of mandibular enlargement with prognathism, enlargement of the hands and feet—the latter by a size and a half—adiposis and paresthesiæ, characteristic central headache, asthenia, and attacks such as described by Marks under the heading, " Acromegalic State."

Such confusions regarding children must be very difficult to avoid; and the explanation of an error of diagnosis should be first excluded before we venture to infer that it is a matter of indifference whether we prescribe gland products so different as iodothyrin, chromaffin extractive, and posterior

pituitary substance, even though we do admit the great power of such products as stimulants to growth.

Concerning the thyroid juice, we have to remember that its chief function seems to be activation of chemical reactions already prepared, rather than an actual participation in the metabolic equation. The hyperthyroid child is merely sluggish, not idiotic or demented; the physiologic processes are not changed in kind, but merely retarded. Even growth is not permanently arrested; and the proof of this is that thyroid feeding completely changes the clinical picture. Likewise, when the thyroid secretion is in excess, there is merely a speeding of the machine and its chemistry. It would seem that only when the speeding up preponderates upon some definite organ which can pervert function is there produced anything more than a hypermetabolism.

For instance, the nymphomanic type of reaction so often seen in hyperthyroidism cannot be due to that directly, but may be due to the increased labilisation of the ovarian secretion caused by the thyroid juice. I say "may be," for we must take into account also the psychologic determinants of sexual desire; and this will only be done when a series of proper analyses are made in such cases of hyperthyroid nymphomania by men trained to weigh both the bodily and psychic factors in such cases.

I say this because of some experiences which indicate very strongly that the etiology of some cases of hyperthyroidism is in the main psychologic; and also on account of the fact that states of fear, shame, and anxiety, which produce thyroid hyperactivation, often have to do with psychologic situations concerning the reproductive function.

But because of the diffusion of the thyroid juice throughout the circulating fluids, it must be remembered that this juice is ready to activate at once any organ whatever which happens to be extraneously stimulated at the moment. Accordingly, as the stimuli to reproductive activity are very abundant in community life, it is possible that the primitive factor of a psycho-sexual disorder may have to be sought for in an initial thyroid hyperactivation caused by a chemical agent, such as a toxin absorbed from the mucous membrane of the respiratory or digestive apparatus. The question can only be settled by the very careful analysis both physical and psychic, of many cases.

For instance, a woman of 28, with hyperthyroidism, showing hyperplasia and eye-signs, referred to me for psychologic treatment, could trace back characteristic psychologic reactions to the age of 13, and associates them with the tremendous mental tension and anxious emotion created by constant friction between her father and mother.

To attribute far-reaching and profound disorders to a tight prepuce, a deviated nasal septum, or errors of refraction or similar abnormalities supposed naïvely to create disturbances reflexly, is unworthy of the medicine of this day. Of course, I am not alluding here to instances where refractive error causes so much extra effort as to overload, or where a twisted septum creates respiratory difficulties or venous stasis, or where

proper cleanliness is not secured because of a tight prepuce. None of these mechanisms is reflex, and all definitely demand interference. What I am referring to is the looseness with which the word reflex is impounded to serve as a cloak for ignorance of pathogenesis.

DUCTLESS GLAND IRREGULARITIES IN BACKWARD CHILDREN.*

By E. BOSWORTH McCREADY, M.D.,
Pedologist to the South Side Hospital and to the Gusky Orphanage and Home,
PITTSBURGH, PA.

I LIMIT the term "backward" to those cases of retardation, mental defect, or mental deficiency in which restoration to normal is possible under appropriate treatment, medical, hygienic or educational (the last considered in its widest sense of evironmental regulation). True feeble-mindedness of any degree, though improvable, is incurable.

In many instances the two classes possess points of similarity which makes differential diagnosis a matter of some difficulty. This difficulty is aggravated by the looseness of nomenclature and inadequacy of definition.

The feeble-minded child can never, through any system of treatment, education, or training, become a useful member of society adapted to the station in life into which he was born. The backward child, however, may; though if he be neglected, his mental development may remain at a standstill, or even retrogress, until his condition becomes essentially the same as that of the feeble-minded.

I believe we are justified in postponing our diagnosis of feeble-mindedness in carefully selected members of one class of individuals, and tentatively classifying them as backward until we have exhausted every therapeutic measure at our command. These are the ones in whom developmental anomalies suggest deficiency or irregularity of action of one or more of the glands of internal secretion.

It is now pretty generally conceded that the chain of ductless glands is of the greatest importance in the development of the cerebrospinal and osseous systems in early life, and that impairment of the functions of one or another of these glands underlies the disorders of nutrition which inhibit proper development. While our knowledge as to the normal action of these glands is still somewhat hazy, yet they are found in some manner to preside over certain correlations of the body. These correlations are exceedingly variable, and this variability is most apparent when and where circumstances are abnormal. The adjusting mechanisms of development are more or less reciprocal; thus, a ductless gland not only influences development, but is itself influenced by changes in general development.

* Read at the Pittsburgh Session of the Medical Society of the State of Pennsylvania, September 22, 1914.

There is reason to suppose that in the harmony produced through the concerted action of the ductless glands, the leading rôle is played by the thyroid, which supplies the stimulus for bodily metabolism. As a check upon the influence of the thyroid in infancy and childhood, the thymus, the general lymphatic system, and perhaps the pineal gland, become active. In addition these produce that delay of sexual activity which is essential to the proper maturation and stability of the somatic functions. In due time the adrenal system stimulates the sexual organs to action, as well as hastening the growth of the muscular and skeletal systems. Of great importance at this time is the action of the secretion from the pituitary gland, which stimulates the development of every organ in the body. This much may be postulated regarding the influence of the internal secretions upon somatic development. Their influence upon psychic development is shrouded in a greater degree of obscurity, though the state of our knowledge is rapidly increasing through the clinical study of abnormal conditions accompanying variations in ductless gland activity. Especially through the study of pathologic conditions of known origin and symptomatology, are we able to recognize variations which, though comparatively slight, may be productive of grave consequences to the future efficiency of the child.

Seldom, if ever, do we find a case of defective development in which the anomaly can be attributed exclusively to irregularity of action of one gland. Even in cretinism there is some doubt as to whether hypothyroidism is the only factor, as this condition has been found accompanied by an enlarged pituitary, though as the pituitary tends to increase in size in thyroidectomized animals, this enlargement may be secondary to the primary thyroid anomaly and compensatory in its nature. Halsted[1] has adduced convincing evidence that the thymus gland plays an important part in exophthalmic goiter, and may in some cases assume the dominant rôle. In short, it may be said that even in the acquired forms of ductless gland disorder, such as occur as a result of infection, trauma, etc., in a gland previously healthy, disturbance of one of the chain throws all the rest more or less out of harmony, with resulting variation and retardation in development.

The majority of backward children in whom the backwardness is not due to accidental causes, such as illness, lack of training, and other purely environmental influences, present evidence of ductless gland irregularity, emphasized often in some particular gland. The involvement may be due to causes distinctly hereditary in origin or to antenatal agencies affecting the child *in utero*. Quoting from a previous paper,[2] "Conditions have a vitiating influence upon cell development, as tuberculosis, syphilis, cancer, chemical poisons, malaria, alcoholism, drug habits, insanity, goiter, malnutrition, and environmental influences of various kinds occurring in the progenitors, result in imperfect growth of the developing embryo. In the first few weeks of fetal life, when the ductless glands begin to appear, the cells of which they are composed also grow imperfectly; and, unable to secrete to the extent to which they were destined, further defective de-

velopment ensues, and we have as a result infantilism, hypoplasia, degeneracy—call it what you will—in varying degree."

Of these terms I prefer "hypoplasia." Infantilism, properly qualified as "thyroid infantilism," "pituitary infantilism," etc., conveys the impression of a clinical entity. "Degeneracy," from long misuse, carries with it a stigma of moral obliquity. "Hypoplasia" seems to be a generic term admitting of wide application. Hypoplasia may affect any organ or any structure, and to almost any degree. Thus hypoplasia of the nervous system gives us the idiot as one extreme and the child designated simply as of neurotic make-up as the other. The various stigmata of degeneracy are somatic manifestations of hypoplasia. Certain neuroses and psychoses, drug habits, alcoholism, etc., if not the direct result, are prone to occur in individuals presenting symptoms of hyperplasia of the nervous system in greater or less degree. Chlorosis, appendicitis, tuberculosis, and a host of other dyscrasias, diatheses, infections, and morbid states are common in the hypoplastic.

The hypoplastic backward child is distinguishable from his normally constituted fellow through anatomical, physiologic, and psychic characteristics, the interpretation of which serves to implicate the glands of internal secretion as a factor of etiological significance. The clinical picture most often seen is the undersized, undernourished child whose unstable nervous system is still further handicapped by the effects of reflex disturbances arising from nasal obstruction, defective vision, or perhaps phimosis. These conditions are often erroneously looked upon as direct causes of backwardness. They should be considered as evidences of evolutional hypoplasia. Other symptoms are delayed epiphyseal union (as revealed by the X-ray), tardy dentition and abnormalities in the growth of the hair. Deficiency of the eye-brows in the outer third, the *signe du sourcil,* is considered a symptom of thyroid insufficiency. Delayed sexual development is common, though sexual precocity may be found, suggesting hypophyseal involvement. Premature eroticism leading to masturbation and perversions of the sexual instinct are of frequent occurrence in hypoplastic children. In some cases early development of libido seems to be due to hyperthyroidism, as I have found an over-acting thyroid in practically every girl I have examined in Juvenile Court accused of offenses to sexual morality.

The high-arched palate, produced by yielding of the palatine bones, owing to their relative poverty in calcium salts, is a fairly constant symptom of hypoplasia. Dental malocclusions are likewise common. Variations in bodily temperature are frequently found. In hypothyroidism, especially, the temperature is apt to be subnormal at times, with cold extremities, clammy skin, and chilliness, evidences of deficient oxidation and nutrition. Low blood-pressure, Sergent's white line, adynamia, sometimes with slight bronzing of the skin, and decreased resistance to infection point to underdevelopment of the adrenals. Anomalies of bony development hint at absence or defective function of the thymus. That defective development of the thymus must be seriously considered as a factor in some cases of

defective mental development is shown by the statement of Morel,[3] that "75 per cent. of idiotic children with normal thyroids, meninges, and nerve-centers, possess no thymus. Thus, at Bicetre, from 1890 to 1903, autopsies of 408 nonmyxedematous idiots ranging in age mostly from 1 to 5 years—none being above 15 years—showed the thymus present in 104 instances." He believes that in view of the occurrence of idiocy in dogs in which the thymus has been extirpated shortly after birth, congenital absence of the thymus is actually the cause of the idiocy. Hyperthymism, in which the toxic action would seem to occur by reason of either quantitative or qualitative abnormality of the secretion, presents the following characteristic features: (1) Pale skin, scanty hair covering, exaggerated panniculus adiposus, and poor development of the genital glands and adnexa; (2) hyperplasia of the various groups of lymph-nodes (neck, axillæ, and mesentery); (3) hyperplasia of the tonsils; (4) hyperplasia of the lymphoid follicles of the nasopharynx, base of the tongue, and intestinal wall; (5) hyperplasia of the spleen; (6) hyperplasia of the thymus; (7) cardioaortic aplasia; (8) lymphocytosis, etc. These stigmata are seldom all present at once (Paltauf). I have not found attempts at determining the condition of functional activity or of the size of the thymus gland to be particularly satisfactory. Though successful attempts to obtain a shadow by the Röntgen rays have been reported, neither Dr. Schaefer (who has kindly radiographed my cases) nor myself have been able to substantiate these findings. Carl Basch and Adolph Bohn report a similar experience.[4] These authors describe a method of auscultatory percussion, a refinement of the Blumenreich technique, which they found very satisfactory.

The study of any child is not complete without a radiograph of the region of the sella turcica, to determine possible deformation of the structure with resulting dyspituitarism. The findings must be interpreted with reference to symptoms of disorder of this gland as well as their relation to other glands of internal secretion. A small sella turcica will often be found in children of retarded physical and mental development, exhibiting infantile characteristics approaching the Lorain type or the dystrophia adiposo-genitalis of Fröhlich. In some there is an enlargement of the clinoid processes, particularly the posterior, practically closing the space. This finding, almost constant in certain forms of epilepsy (confirming Johnston's observations[5]), I have also noticed in children without epileptic history but presenting evidence of mental instability. I recently observed an unusually large sella turcica in a boy of fourteen who showed sexual precocity, an unusual growth of hair, and unusual muscular development. This boy, though shown by so-called standardized tests to be of normal mental capacity, had the mental attitude of the habitual tramp; dislike of sustained effort, love of change and travel, etc. Another boy, aged 15 years, had a large sella, marked prognathism, and large flattened nose, showed some retardation in sexual development, and responded poorly to tests, though showing under continued observation a sense of responsibility and degree of application unusual at his age. In fact, radiographic studies

of the sella turcica present an interesting field for the study of the phenomena of retardation and deviation. The findings must, however, be interpreted with caution, at least until a large mass of material has enabled us to judge just what constitutes a normal conformation, and what are the variations. Myself and co-workers at the Pædological Clinic are having radiographs made of practically every case presenting anomalies of growth, which material will later be made the basis of a paper.

Treatment.

We are far removed from the crude empiricism of the days of Brown-Séquard and his over-enthusiastic followers. A fund of knowledge has been acquired that has placed organotherapy upon a rational foundation and furnished concise indications for the administration of definite gland extracts in definite diseased states.

In the class of cases which we are considering the indications are not so definite, and the administration of glandular extracts must for the present be upon more or less empirical grounds. As has been mentioned, it is seldom that we observe a case in which the anomaly can be attributed to irregularity of action of one particular gland, though there are numerous cases in which the symptoms involving one gland are more prominent. With a polyglandular condition to treat, the indication is for polyopotherapy. I am in the habit of administering to such cases small doses of pituitary, thymus, thyroid, and adrenal glands. For males, testicular extract is added; for females, ovarian and mammary extracts. The usual result is improvement in nutrition, increase in growth rate, increase in blood-pressure, decrease of pulse-rate, and improvement in mentality. The thyroid should be omitted entirely or reduced to a minimum in cases showing the least evidence of hyperthyroidism. In this same class of cases of polyglandular disorder I have gotten practically the same results in some cases by the administration of thyroid alone and thymus alone. Improvement following the administration of the extracts has been reported by other observers. Thus, Dana and Berkeley[6] have reported the results of investigations which they carried on under a grant from the Rockefeller Institute. Pineal extract was fed to a number of defective children in whom no grave organic brain defect existed. They believe that the pineal gland has a definite and important function, viz., that it promotes the development of the human nervous system, and they assume that it supplies a minute amount of intracellular ferment accelerating the growth of the gray matter of the brain. While in the cases which they report mentality showed a steady and gratifying improvement lasting over the whole period of administration, such improvement, as reported, was no more marked than I have observed in cases treated as outlined above. It is my opinion that improvement results from the stimulation of metabolic processes by bringing into equilibrium the various glands with their common, though tangled relationship, rather than through any selective action upon a particular gland.

When the symptoms pointing to one gland predominate, as in hyperthyroidism, hyperpituitarism, etc., the indications are more specific. I have known an apathetic, listless boy, who would take no part in the occupations of his school-fellows, to be transformed in a few weeks by small doses of thyroid into a lively, mischievous youngster. A little girl of 3 years, short, fat, and stolid, who showed little desire to talk, was put upon thyroid extract with the result that her mother came to me a few weeks later with a request from the family that I give her something to stop her talking. In hypothyroidism with marked adynamia and other symptoms of deficiency of the adrenals, Taylor recommends that adrenal and thyroid extract be given together.[7] Kerley and Beebe[8] report a case of retarded physical development in a boy in which treatment by thymus extract apparently gave brilliant results. In other cases presenting infantile characteristics, pituitary extract is indicated, especially when positive symptoms of pituitary deficiency are present.

REFERENCES.

1. W. S. Halsted: Significance of the Thymus in Exophthalmic Goiter. Bulletin of the Johns Hopkins Hospital, Aug., 1914.

2. McCready: Ductless Gland Irregularities in Backward Children. Interstate Medical Journal, Aug., 1914.

3. L. Morel: Thymic Syndromes. Monthly Cyclopedia and Medical Bulletin, June, 1914.

4. Carl Basch and Adolph Bohn: Physical Evidence of the Thymus. American Journal of the Diseases of Children, Sept., 1913.

5. George C. Johnston: The Pituitary Gland in its Relation to Epilepsy. Surgery, Gynecology, and Obstetrics, April, 1914.

6. Charles L. Dana and William N. Berkeley: The Functions of the Pineal Gland. Medical Record, May 10, 1913.

7. J. Madison Taylor: Development and Its Anomalies. McKee and Wells's "Practical Pediatrics," vol. ii, p. 1140.

8. C. G. Kerley and S. P. Beebe: A Case of Delayed Development in a Boy Treated with Thymus Gland. American Journal of the Medical Sciences, Aug., 1912.

DISCUSSION.

Dr. J. Madison Taylor, Philadelphia, Pa: The speaker, Dr. McCready, has made a second and valuable contribution to the aberrancies of growth depending on the ductless glands. I have tried to learn something about growth forces for several years, and corresponded with a number of prominent biologists and geneticists. So far there is little to work upon, and the most promising domain is this one of endocrinology. Such contributions as these will aid materially in reaching practical conclusions. We now have data enough on which to base helpful working principles. Some of the clinical findings are based on sound conclusions, though most of our procedures are as yet in the main empirical. None the less our results are rapidly growing in certitude. The most obvious need is exactness in diagnosis. I would urge closer observation of the acute disturbances involving the ductless glands. These doubtless occur only too frequently, and escape detection. Acute effects wrought by infections upon growth forces are inferred, but seldom described; hence we do not yet know much about those affecting the structures of the ductless glands.

I observed about 20 cases of acute thyroiditis occurring during an epidemic of measles at Blockley some years ago. They were promptly relieved by applying a collar of absorbent cotton and keeping this wet with ice water. I hope others will

note similar conditions and describe them in detail. Definitions in the symptomatology of acute disturbances are much needed, as well as finer differentiations of the earlier chronic phenomena.

The pituitary, biologically the osphradium or test-organ, is readily disturbed in function by hypertrophic development or disease. In addition it probably, in functioning to sutain blood-pressure by its secretions, stimulates the permeability of the adrenals and thyroid. Thus by driving oxidation and anabolism at an inordinate rate it excites abnormal growth.

In overactivity of the adrenals, excessive growth tends to occur in early life, from the first to the eighth year, *e.g.,* in hypernephroma. In this condition a child of 8 may become as large as an adult; the external genitalia are over-developed, there is hair on the pubes, and obesity, etc. exist. Sajous is of the opinion that the adrenals supply the secretion which, as oxidizing agent of the hemoglobin, sustains tissue oxidation and the anabolic phase of metabolism, *i.e.,* the tissue-building processes, particularly in the muscular elements.

As for overgrowth of thyroid origin, it is only during the years of growth that the thyroid gland proves effective in increasing stature. Its influence on metabolism, however, is the main factor in its beneficial effects; it exerts some effect in enhancing calcium metabolism. It is, in fact, through the influences they exert on metabolism and oxidation that the various ductless glands produce effects on growth and development.

One must be prepared to identify the particular signs of defect in each or both adrenals and thyroid, to secure definite, characteristic results. Symptoms of adrenal deficiency occur in three forms: (1) Functional hypoadrenia: Various defective action shown by tardy development in circulatory efficiency, aggravated by exhaustion-states, starvation, etc. (2) Progressive hypoadrenia: *e.g.,* Addison's disease in its various degrees and forms. (3) Terminal hypoadrenia, occurring in connection with infectious diseases,—toxemias,—owing to exhaustion of the secretory activity of the adrenals, early in the course of the infectious processes.

In the study of thyroid deficiency or hypothyroidia, specific symptoms should always be estimated in connection with symptoms due to other causes. The phenomena present are often vague: Weakness, asthenias, shown by apathy, laziness, stupidity, and obstinacy. Any or all these should excite suspicion of defective thyroid action and asthenic disorders of nutrition in their various phases, grades, and directions. The clinical picture is one of mental and physical retardation, depreciation of vigor, loss of cardiac and vascular tone, notably with listlessness and absence of play-impulse. Usually there is some pain,—not much, but it can be elicited. The child is peevish, whimpers, is restless; the temperature is low at times; the extremities are cold, the skin clammy, with chilliness; in short, the evidences are of defective oxidation. The skin is often scaly below the knees, pits readily, and is waxy; the eyelids are puffy; on exertion there occurs dyspnea and palpitations; the blood-pressure is often low, and the pulse weak, quick, and irregular. All sorts of mild blood-changes occur. The teeth are defective and decay readily, owing to deficiency of calcium and phosphorus; resistance to germs and infections is low; the nasopharynx is hypersusceptible, likewise the tonsils; the intestines are of lowered tone; the liver is passively congested, often enlarged; varicosities occur, likewise bilious and renal colic; the urine is scanty, often slightly albuminous, with some sugar; the bones are weak; there are pigeon breast and rachitic deformities, scoliosis or flat foot. The loss of arteriolar tone contributes in the production of hallucinations of sight and sound, and the mind is confused or obtuse.

Dr. C. C. Wholey, Pittsburgh, Pa.: Dr. McCready has given us an unusually clear statement of the position held today in relation to ductless gland metabolism. The men who are discovering and charting the clinical facts which may be correlated with normal and perverted ductless gland activities are contributing toward the solution of some of the most vexing and important of our medical problems.

Several of the points mentioned by Dr. McCready have suggested to me bearings which his studies may have upon certain of these problems, chiefly upon the mental side; and it is toward this mental phase of the matter that I shall direct my discussion.

It has been well established that the various ductless gland secretions have an important influence upon the general body growth and development. It follows that mental growth and development are equally affected by whatever results accrue to the organism as a result of ductless gland metabolism. Indeed, it is because of the mental symptoms, reflected in the individual's anomalous conduct, more often than for any other reasons, that the doctor's advice is sought in that borderland class of cases in which Dr. McCready has generally found evidence of ductless gland irregularities.

We know that any change in body chemistry is always recorded in altered brain activity, and this in altered conduct. The evidence of such alteration may elude the physician when slight, though present just as definitely as when it becomes grossly obvious. Men who are not psychiatrists have called attention to the numerous mental anomalies which they have found to be associated with ductless gland disturbance. Harvey Cushing[1] lays much stress upon the mental and emotional disturbances observable in both animals and man as a result of hypo- and hyper- pituitarism, as well, as in other ductless gland disorders. In cases of hyperpituitarism he speaks of the wakefulness, lack of concentration, indecisiveness, irritability, distrust, the inability to take an education, the general low mentality of giants, etc. He likens these manifestations of hyperpituitarism to the mental symptoms of dysthyroidism; likewise in hypopituitarism, according to Cushing, all grades of mental disturbance occur, from mild psychoses to extreme mental derangement with epilepsy. Plummer,[2] of the Mayo clinic, considers the mental symptoms characterizing thyrotoxic disturbances as the most constant and significant, and calls particular attention to the accompanying irritability and depression. Marburg[3] of Vienna, in discussing anomalies of the pineal gland, lays great emphasis upon the early sexual ripening characterizing hypopinealism. As we know, there are very marked and definite symptoms such as feelings of isolation, suggestibility, anxiety, etc., which are peculiar to Graves's disease and other hyperthyroid conditions. Often such mental symptoms exist for a long time before being recognized, and may be traced back to early life. Dr. McCready's paper emphasizes the importance of correlating, when possible, the mental symptoms seen in anomalous children with ductless gland disturbance.

In an analysis of the mental reactions seemingly initiated as a result of ductless gland malfunctioning, the mechanism of the process appears to receive explanation through a consideration of such facts as the following: The profound influence of ductless gland secretion upon the sexual instinct of the child has been mentioned in connection with the pineal gland. We also know that hyperthyroidism is often associated with marked eroticism. When the ripening of the sexual instinct comes about prematurely, it brings with it simultaneously significant alterations in the emotional life of the individual. There comes into play a heightening of the instinct for pleasure, and a switching of the emotions and desires into channels for which the child is unprepared and wholly without experience to meet adequately. Now the sexual instinct is inherently or biologically indifferent in regard to the object by which gratification may be obtained; thus it is a mere accidental happening whether in the developing child the impulse attaches itself to the individual himself or upon one of the same sex, the result being one of various degrees of homosexuality or perversion. This is but one of the unfortunate results of such abnormal sexual development, in which the child has been an innocent and a purely passive and irre-

[1] Cushing: The Pituitary Body and its Disorders.

[2] Plummer: Paper read before Penn. Med. Society, Philadelphia, Sept. 24, 1914.

[3] Marburg: Modern Treatment of Nervous and Mental Diseases, White and Jelliffe, vol. ii, p. 746.

sponsible agent. The appetite has come long before there has been any possibility for the development of those moral, social, and hygienic feelings which ordinarily help in directing this instinct, with all its irradiations, into healthy channels. The child, as a consequence, generally finds himself compelled to retreat from an unfriendly and misunderstanding environment. He becomes secretive and self-absorbed at a time when his life should be wholly taken up with interests outside himself.

As in the above conditions in which the pineal gland seems chiefly to be at fault, one can trace out the development of dangerous mental reactions and habits of thought arising from early disturbances of the thyroid.

Sigmund Freud, working from the mental side, has discovered and verified the tremendous significance of early sexual traumata in the etiology of the neuroses and psychoses of later life. It seems to me that there is a significant connection between this fact and the facts regarding sexual disturbances, and there is weighty reason for the opinion that it is often in these children who show ductless gland disturbances that Freud finds evidences of sexual traumata. The emotional disturbances, sexual and otherwise, set going in these subjects of uneven development will necessarily find expression and compensation in the so-called neurasthenias, hypochondrias, perversions, tics, obsessions, etc., now classed as neuroses and psychoses. Many of the unusual traits and eccentricities seen in children are but the earlier manifestations of such conditions later becoming more clearly defined. As examples may be mentioned such traits as excessive shyness and timidity, habits of running away, thefts, cruelties, mannerisms, etc.

Finally, it is more than a coincidence that one so frequently finds evidences of perverted thyroid activity in cases of dementia precox, and that this mental aberration so frequently finds its first outspoken manifestation following marked hyperthyroidism. The striking similarity between certain phases of dementia precox, particularly in the katatonic, and the milder mental anomalies seen in certain cases of perverted thyroidism, deserves more than this passing mention. After this further allusion to mental disturbance and ductless gland anomaly, I shall quote Professor Bleuler[4] of Zürich, who says in his treatise upon negativism—one of the pathognomonic evidences of dementia precox—that the most important factor in its production is "the autistic withdrawing of the patient into his phantasies, which makes every influence acting from without comparatively an intolerable interruption." Only of less significance in the causation of negativism he mentions "the misunderstanding of the surroundings" and "the sexuality with its ambivalent feeling tones." I know of no more likely soil for the development of the above serious mental anomaly than that found in those very subjects who furnish evidence of some ductless gland perversion.

Dr. W. K. Walker, Pittsburgh: Dr. McCready has performed a distinct service in presenting this important subject in a manner which very clearly portrays some of the essential somatic features of a class of cases which at different periods of life are brought to the notice of the psychiatrist. We now know that the glands of internal secretion play an important part in the chemical co-ordination of the body. Their imbalance is exhibited not only in perversion of bodily functions, but also in defect of cerebral cortical functions, which, in early childhood, may be so marked that varying degrees of "retardation" are exhibited. Clearly grounded upon defect somewhere within the chain of ductless glands are milder psychotic states encountered in subjects which cannot be said to be "retarded" in mental development. Especially in adolescence—that period of life marked by that new growth-impulse which leaves its impress upon both the bodily and the mental development of the individual—do we encounter clinical evidence of disorders in the mental sphere. These may vary

[4] Bleuler: The Theory of Schizophrenic Negativism. Nervous and Mental Disease Monograph Series, No. II.

from "moods" of elation, of depression, or of apathy, often mingled with various neurotic and psychotic symptoms, to that special type of failure described under the term "dementia precox." A goodly percentage of cases of this latter group are undoubtedly recruited from these hypoplastic individuals.

ADRENAL INADEQUACY AS THE CAUSE OF FUNCTIONAL INSUFFICIENCY IN HYPERTROPHY OF THE HEART.*

By O. JOSUÉ, M.D., and F. BELLOIR, M.D.,

PARIS, FRANCE.

Four cases of cardiac hypertrophy in which insufficiency of adrenal function appeared to be the cause of ultimate death from heart-failure, are discussed by the authors. In each of these cases a considerable hypertrophy of the heart was present, especially of the left ventricle. Either valvular disease or nephritis was the cause of the hypertrophy. Both the systolic and diastolic blood-pressures were persistently low in each case, notwithstanding the cardiac hypertrophy. Three of the four cases showed complete arrhythmia with auricular fibrillation. The usual manifestations of heart-weakness, viz., dyspnea, pulmonary and hepatic congestion, and edema, were present. Weakness of the right heart with venous stasis was not, on the whole, a prominent feature, disturbances of cardiac rhythm and dyspnea dominating the scene in most cases. Digitalin was found but slightly active in this type of cardiac insufficiency. Marked, though temporary, improvement, on the other hand, was observed in the single case in which epinephrin was administered. The patient was given 2 milligrams ($\frac{1}{32}$ grain) of epinephrin daily in four doses for five days, and the resulting betterment persisted for two weeks, dyspnea then returning and the patient dying suddenly a few days later. Extract of whole adrenal gland seemed to produce betterment in one case in which it was given. Although all the cases died, the authors deem it likely that less serious cases of the same kind will in future be detected, now that attention has been called to this type of disturbance, and that by starting adrenal administration sufficiently early, a fatal termination will be prevented. Each of the four cases reported, however, died suddenly at a time when dyspnea, cyanosis and edema seemed to be diminishing.

Post-mortem examination in the first case showed a heart weighing 750 grams, with marked thickening of the parietes of the left and right ventricles, as well as disease of the aortic and mitral valves. The hearts in the other three cases weighed, respectively, 730, 510, and 515 grams. Histologic examination of the heart showed a relatively unaltered state of the contractile tissues. There was merely slight thickening of the connective tissue-strands, and in some hearts a few small sclerotic plaques. The muscle fibers showed no extensive degenerative changes—merely a few vacuoles in two

* Summary of article in Bulletins et Mémoires de la Société médicale des Hôpitaux de Paris, April 9, 1914.

instances. In each instance, however, there was some rupture and fragmentation of the fibers (lesion of Landouzy-Renaut).

The adrenal glands were very small in all these cases, weighing respectively 4 Gm. apiece in the first case, 3 and 4 Gm. in the second, 4 and 5.2 Gm. in the third, and 3 and 4 Gm. in the fourth. Histologic examination showed marked lesions of these organs, their secretory activity having therefore been even less than macroscopic appearances would indicate. The medullary portion was in some instances reduced to a greater degree than the cortical portion. Thus, in the first case the cortex was practically normal in thickness, but the medulla somewhat diminished. There was also marked sclerosis of both cortex and medulla and in places small nodes of leucocytic infiltration were visible. In the second case, there was especial atrophy of the medullary substance, together with pronounced microcytic transformation in the zona fasciculata of the cortex and slight fibrosis of both medulla and cortex. In the third case there was merely slight sclerosis of the adrenals, and in the fourth, simultaneous diminution of both portions of the glands.

In each of these cases the myocardium presented the appearance of a powerful muscle and not that of a flaccid muscle that has yielded. The lesions observed did not account for its failure. Cases such as the above did not escape the observation of J. Mackenzie, who has referred repeatedly to what he terms the "reserve force" of the heart. This reserve force may, on some occasions, be exhausted, in which case recovery of the cardiac energy under the influence of heart-tonics becomes impossible, and a fatal termination ensues. Now, it is open to question whether this reserve force of which Mackenzie speaks actually resides in the heart itself. There exist, indeed, organs producing a secretion which is indispensable to the cardiac contraction, viz., the adrenal glands. These exert a myotonic action on the cardio-arterial muscular system. This being the case, hypertrophy of the heart should be accompanied by hyperplasia of the adrenals, these organs being required to secrete more actively in order to maintain the contractions of a larger and more powerful myocardium. Wiesel has, in fact, observed adrenal hyperplasia in the cases of cardiac hypertrophy, and his investigations have been confirmed by Vaquez and Aubertin, Josué, and Paillard. There occurs in such cases a sort of physiologic adaptation of these glands to the myocardial hypertrophy, and a necessary correspondence in the course of these two conditions exists. It is consequently of interest to compare the weight of the adrenals with that of the heart in this and other types of cases. Such a comparison was made by the authors in the course of autopsies on 24 cases, most having suffered from heart-disease, others from tuberculosis, nephritis, etc. The weight of the heart averaged 30 times that of the adrenals, the extremes being 15 times and 50.4 times. From tabulation of these cases one learns also that the adrenals are large where the heart is hypertrophied. Thus, in the case of a heart weighing 450 Gm. the adrenals weighed together 15 Gm., while in the case of a heart weighing 710 Gm., the adrenals weighed 28 Gm. In the four cases of "adrenal heart-failure," on the other hand, while the heart was very large, the adrenals were very small.

in the first case, with heart weighing 785 Gm., the adrenals weighed 8 Gm. only—a ratio of 98 to 1. In the other three cases the ratios were, respectively 104 to 1, 55 to 1, and 73.5 to 1—in each instance a higher ratio than in any of the 24 cases already referred to. Besides, the disproportion between heart and adrenals in these four cases was made even greater through the fact that pathological changes restricting the functional capacity of the adrenals had taken place. The normal excitant to cardiac activity supplied by the adrenals was thus to a marked extent deficient in these cases.

The conclusion from these findings is that the cardiac insufficiency in the four cases referred to was due, not to disease of the myocardium, but to a relative inadequacy of the adrenals, the latter being unable to supply the necessary excitant for the contractions of the hypertrophied heart-muscle. The authors, therefore, propose to group such cases under the terms *asystole of adrenal origin* or *adrenal asystole*. The cardiac hypertrophy itself may, of course, be due to a variety of causes, such as valvular lesions, or renal or adrenal disorders. It is known that adrenal hyperplasia causes hypertrophy of the heart. The poor development, atrophy, or pathological changes in the adrenals may also be due to different causes. The question arises whether the adrenals do not at times finally become exhausted after having, for a more or less protracted period, undergone the excessive secretory activity required by an hypertrophied heart-muscle. Another factor to be mentioned is tuberculosis. Three of the four cases reported showed, in fact, tuberculous lesions of varying extent.

On the whole it may be said that there exists a special variety of functional insufficiency of the hypertrophied heart due to inadequacy of the adrenal glands: adrenal systole. Clinically, the chief distinguishing features are a well-marked hypertrophy of the heart with persisting low systolic and diastolic blood-pressures. The adrenal "white line" is also present and in the majority of instances complete arrhythmia. Pulmonary tuberculosis is frequently associated. All the cases observed by the authors died suddenly. Pathologically the heart-tissue is but slightly diseased; the adrenals are small in comparison to the heart (low adreno-cardiac index) and often diseased. Digitalis has but little hold on these cases. Epinephrin and adrenal extracts, on the other hand, seem to be beneficial; their administration should be begun as soon as adrenal inadequacy is suspected.

DISCUSSION.

E. Sergent emphasized the importance of Josué's observations and stated his ability to confirm Josué's observations and explanation from his own experience. He had witnessed a rather large number of cases of cardiac insufficiency in which adrenal inadequacy seemed to play at least a partial causal rôle. Apart from the instances of cardiovascular weakness often met with in infectious diseases and severe toxic states, it seems very probable that in some cardiac cases, the sudden evidences of failure commonly ascribed to myocarditis and often ending in death are actually due to adrenal insufficiency, as indicated on the one hand by autopsy findings and on the other, by the favorable effect of epinephrin and failure of digitalis. For several years the author has been inculcating in his ward class students the practical signifi-

cance of this fact. To be sure, one should not conclude that adrenal weakness participates in all cases of heart failure. Such weakness is, however, one of the disturbances through which cardiac insufficiency may arise. without the necessary intervention of myocarditis.

GRAFTING OF THYROID FROM A MONKEY IN A CHILD SUFFERING FROM MYXEDEMA.*

By G. VORONOFF, M.D.,

HYÈRES, FRANCE.

The author had occasion to observe the case of a child of 14 suffering from myxedema as a sequel to an attack of measles six years before. Since that period the child's physical and mental development had been suddenly arrested. The skin was yellow, scaly, and dry; the hair scanty and brittle, the eyelids swollen, the nose broadened, the lips thick, the cheeks flaccid, the face widened, the eyes lacking in luster, and the general appearance dull and apathetic.

Transplantation of the right lobe—with its parathyroids—of the thyroid of a large monkey into the cervical region of the patient was done by the author. The results were most satisfactory. As months passed after the operation, a regular and pronounced improvement in the child's condition was manifest. The facies gradually lost its yellow color, the nose and lips their swollen appearance; the oval outline of the face became distinctly more elongated, and the growth of the body resumed its normal course. Previously apathetic and sleepy, the child became more and more lively in school, finally arousing surprise by his unusual turbulent behavior. Intellection showed an especially rapid improvement, studies being taken up with entirely unaccustomed ease and alacrity. Photographs taken before and six months after the operation clearly showed a marked change in the patient's appearance.

The author ascribes the results obtained in this, the first successful case of heterogeneous transplantation of thyroid tissue from monkey to man, to the special technique employed. Its essential points were as follows: (1) Most rigid asepsis. (2) The time elapsing between the removal and implantation of the grafts must be as short as possible—only a few minutes. (3) Implantation of the gland in a very vascular region. (4) Formation, by means of sutures between the transplant and the tissues in which it is grafted, of multiple adhesions through which the newly-formed capillaries and other vessels from the host may rapidly enter the transplant and make of it an integral part of the organism. With the aid of this technique, transplantation of the thyroid from monkey to man becomes possible, and a large number of myxedematous adults, and especially children, now lost to society, or causes of sorrow to their parents, and condemned to a vegetative type of life, can be saved.

* Summary of article in Bulletin de l'Académie de Médecine, June 30, 1914.

ADRENAL GLANDS AND INFECTION TOXINS.*

By A. MARIE, M.D.,

PARIS, FRANCE.

The hyperemia, often very pronounced, of the adrenals observed in the course of various bacterial diseases, such as diphtheria, tuberculosis, and tetanus, and the histologic changes described in the same organs under like conditions, led the author to investigate the question whether the adrenals do or do not contribute to the defence of the system against infectious agents and their products.

Action of Epinephrin on Tetanus Toxin.—If a mixture of tetanotoxin and epinephrin in suitable proportions is heated at 37° for a few hours in a small sealed tube, the resulting product is quite devoid of toxicity, even in a species so sensitive to tetanus as the mouse. One one-hundredth of a milligram of natural epinephrin is capable of neutralizing fifty lethal doses of toxin in this animal. One to one thousand solutions of synthetic levosuprarenin (tartrate), dextrosuprarenin (bitartrate), and racemic suprarenin (hydrochloride), all neutral to litmus, also showed this neutralizing property, the levosuprarenin, in particular, acting as strongly as natural epinephrin in this respect. Likewise, the hydrochloride of dioxybenzylmethylamine proved capable of annulling, in approximately 1-mg. amounts, 50 lethal doses of tetanus toxin.

What is the reason for this neutralizing property? It is well known that oxidizing agents are destructive to tetanotoxin. According to Siebert, 0.5 Gm. of calcium dioxide will neutralize 1000 lethal doses of the toxin. Hydrogen dioxide, oxidases, and laccase have also proven effective in this direction, apparently destroying the toxin completely, since it loses the power to provoke the formation of antibodies. The solution of epinephrin used need not be fresh to exercise its neutralizing action on tetanus toxin. Passed through a porcelain filter, a solution of epinephrin becomes oxidized and brownish, and loses a large part of its own toxic power; yet such a solution exerts the same neutralizing action on tetanotoxin as before its oxidation. If a mixture of epinephrin and tetanotoxin be placed in a refrigerator, the neutralizing action is not exerted, however, a temperature of 37° C. being required. That a chemical reaction actually takes place between epinephrin and the toxin at 37° is shown by the gold chloride test for epinephrin, which becomes negative in tubes where neutralization has occurred, though remaining positive in control tubes containing only oxidized epinephrin, without any tetanotoxin.

Neutralization of tetanotoxin by epinephrin fails in the presence of readily oxidizable bodies such as hemoglobin. If sealed tubes containing *oxidized* epinephrin and an excess of tetanotoxin are placed in the incubator,

* Summary of article in Annales de l'Institut Pasteur, April, 1913.

the toxicity of the epinephrin is restored (oxidized epinephrin having lost most of its toxicity), mice treated with the resulting mixture dying *in a few hours* after presenting symptoms of epinephrin poisoning,—the epinephrin having evidently become reoxidized at the expense of the tetanotoxin. These experiments suggest that it is by oxidation that epinephrin removes toxicity from tetanotoxin. (The neutralization of the toxin by epinephrin was not prevented by establishing a high degree of vacuum in the tube containing the mixture, or by introducing nitrogen gas into it before mixing the two).

Action of the Adrenal Glands upon Tetanus Toxin.—While 0.01 mg. of epinephrin will neutralize *in vitro* at least 50 lethal doses of tetanotoxin. much larger amounts—0.03 Gm.—of adrenal gland, dried *in vacuo,* do not have the power to neutralize even a single dose of the toxin. Yet this powder contains all the epinephrin of the gland tissue; injection of an emulsion of it in suitable amounts into animals causes symptoms of epnephrin poisoning followed by death. Evidently the adrenal contains substances which, while not removing the toxicity of epinephrin, yet prevent it from neutralizing tetanus toxin.

If one passes through a porcelain filter an emulsion of adrenal powder in saline solution, the adrenal becomes oxidized and leaves the filter with a brownish tint; now, if a little of this filtrate be added to a tetanotoxin-epinephrin mixture, the toxin will not be neutralized by the epinephrin. Again, if glycerin in which crushed adrenal glands have been allowed to macerate for several days is precipitated with alcohol and the precipitate is washed with alcohol followed by ether and then dried by means of sulphuric acid *in vacuo,* a powder is obtained which, suspended in water, will counteract the antitetanic action of synthetic or natural suprarenin, though it will not prevent the reaction of the epinephrin on the toxin if the mixture of these two substances has previously been placed a few hours in the incubator.

The lack of neutralization of tetanotoxin by epinephrin in the presence of other substances contained in adrenal substances is not specific, for liver extracts, cerebral tissue filtrates, and bodies such as lecithin possess the same property. It may, in fact, be due to some such substance as lecithin —so abundantly found in the adrenal cells—or one of its derivatives.

Mixing tetanus toxin with epinephrin, while leading to neutralization of the former, does not destroy any of the toxicity of the latter.

Wassermann and Brück have taken advantage of the vasoconstrictor effect of epinephrin and the well-known fact that tetanus toxin is absorbed by the nerve-endings, to attempt to show that tetanus antitoxin (antitetanic serum) merely fixes tetanus toxin, without destroying it. An exactly neutral mixture of toxin and antitoxin was injected by these authors into guinea-pigs in which vasoconstriction had been induced by injection of epinephrin a few minutes before. Whereas in control guinea-pigs the neutral mixture caused no symptoms, in the epinephrinized animals it caused typical tetanic phenomena and death. In these experiments, the antitoxin not having been absorbed owing to the constriction of the capillaries, the toxin had been drawn into the peripheral nerve-endings and thence carried to the centers.

These experiments were successful only where the toxin-antitoxin mixture had been freshly prepared; after an interval of two hours, the combination of toxin with antitoxin had already become too firm to be broken up in the organism. Now, the toxin-epinephrin mixture studied by the author exhibited a similar behavior, and as already stated, a low temperature does not permit of a proper reaction of the two substances, which require subjection to 37° C. for several hours in order that the tetanotoxin shall be permanently neutralized and nervous structures no longer affected in its presence.

Just as tetanus toxin-antitoxin mixtures, however, while neutral in one species of animal, are not in another, so a toxin-epinephrin preparation innocuous in a mouse is not harmless in a guinea-pig. Six or seven times less tetanotoxin per Gm. of animal is required to kill a guinea-pig than a mouse. A 350-Gm. guinea-pig, moreover, succumbs rapidly to a subcutaneous injection of 0.0008 Gm. of epinephrin, while a 15-Gm. mouse withstands 0.0001 Gm. As a result of these different affinities a toxin-epinephrin mixture that is neutral in a mouse will induce tetanus in a guinea-pig, the organism in the latter breaking up the reaction between the two substances in the mixture,—unless the animal dies from epinephrin poisoning in case the dose of the latter has been increased. Thus, in the case of a guinea-pig, epinephrin can be made to neutralize only 5 or 6 lethal doses of tetanotoxin, instead of 50 doses as in the mouse, though the ratio of toxin to alkaloid is about the same in the two instances.

Action of Epinephrin on Diphtheria Toxin.—If mixtures of diphtheria toxin and 1 : 1000 epinephrin solution are heated to 37° C., the epinephrin is found capable of neutralizing 5 or 6 times the lethal dose of the toxin in the guinea-pig.

Concluding Remarks.—The neutralizing action of epinephrin on tetanus or diphtheria toxin is exerted only through direct contact with the toxin. If a lethal dose of pure toxin be injected in the same region where epinephrin, or even a neutral epinephrin-toxin mixture, has already been injected, the animal used will succumb to the toxic action as though no preliminary injections had been made, and furthermore, in the same period of time as the controls.

It is not inconceivable that a bacterial toxin introduced in the system exerts a direct action upon the adrenals, or an indirect action taking place through the nervous system, the influence of which on the adrenal secretory function is now well established. Luksch has shown that in rabbits into which diphtheria toxin has been injected, a marked diminution in the blood-pressure-raising capacity of their adrenals can be constantly made out, as though the reserve of epinephrin in these glands had been completely exhausted. In order to secure this result a rather prolonged period of toxic action was requisite, excessive doses of toxin, which caused death in thirty hours, as in Ehrmann's experiments, leading to different conclusions. Similar observations have been made in animals infected with a colon bacillus, staphylococci, and the tubercle organism. Porak has shown that in rab-

bits inoculated with fixed rabic virus—the virus being injected under the meninges—the functional activity of the adrenals, as reflected in the action of the contained epinephrin, was greatly reduced, if not entirely arrested. Observations such as these tend to support the view that the evidences of cardiac asthenia so often witnessed in infectious diseases may be due to insufficiency of epinephrin supply. The administration of epinephrin is, in fact, widely recommended to overcome manifestations of this nature arising in diphtheria.

PITUITRIN: ITS ABUSE AND DANGERS.*

By A. J. RONGY, M.D., and S. S. ARLUCK, M.D.,

NEW YORK, N. Y.

It is now well established that the action of this drug is transient in character, lasting at most an hour. For its action it is essential that the uterus maintain its state of tonicity, for pituitrin will very poorly, if at all, stimulate an already tired or fatigued muscular organ. It also secondarily raises blood-pressure. Since it does not primarily produce contractions of the uterus, its efficacy *per se* in *induction of labor* is questionable. On the other hand, pituitrin is a great aid in cases in which pregnancy is interrupted in the early months either by the use of the catheter or the bag. In these cases it has been the custom of the author to give it as soon as there is evidence of uterine contractions. In this stage the uterine wall is thick, the contractions are not violent, and the resistance offered to the fetus is comparatively slight. All this justifies the administration of pituitrin in this class of cases. It must be remembered that it is to be given only after labor pains have already commenced. In the induction of labor by the catheter method, while labor nearly always sets in, the contractions are irregular, frequently feeble, and sometimes disappear entirely. Upon administration of pituitrin during this early stage, the pains become more regular, more intense, and labor is more likely to continue uninterruptedly.

In inertia uteri there is an absence or loss of muscular tone, usually due to overexertion, and therefore the most rational procedure is to put the uterine muscle at complete rest until its tonicity has been fully regained. Any artificial measure to make this exhausted muscle contract will not only fail in its purpose, but may even become harmful. Pituitrin is contraindicated in this condition; the uterine wall is thinned out, and the contraction ring is very high. The authors make it a rule to leave the patient alone until sufficiently rested. This rest is best obtained by the administration of morphine hypodermically. After the patient has rested for a short time the uterus regains its irritability and labor pains again set in. If it is now found that the contractions are feeble or irregular, pituitrin may be given to reinforce them.

* Summary of article in New York Medical Journal, May 2, 1914.

Many authors recommend the use of pituitrin in some of the malpositions, also in slightly contracted pelves. From the observations of the authors, they believe it to be unsafe. It is impossible to foretell how pituitrin may act in a given case, for apparently some patients are more susceptible than others, with the result that it will produce violent contractions in one case and prove ineffectual in another. In view of this it is inadvisable to produce long and continued contractions in a case in which the resistance to the presenting part is great, either because of malposition or contracted pelvis. This procedure may prove harmful not only to the mother, but also to the child. As a general rule pituitrin should not be used in any form of dystocia, unless labor has progressed to a stage where artificial delivery can be readily accomplished with reasonable safety to both mother and child.

Pituitrin is never indicated in cases having high blood-pressure, particularly in the toxemias of pregnancy. It is also contraindicated where an increase in blood-pressure may prove harmful, for it is well established that pituitrin quickly raises the blood-pressure from 25 to 40 mm. This sudden increase is likely to be harmful in various forms of cardiac disease. In order to study the exact changes in the blood-pressure, the authors injected pituitrin intravenously in 17 cases and found that within two or three minutes after injection the pressure rose on an average from 25 to 35 mm. and remained so from 30 to 40 minutes. This rise was often followed by a sudden fall below normal.

Pituitrin should be used cautiously in cases in which the fetal heart-sounds are feeble or irregular. It should never be used unless a general anesthetic is within easy reach, for the contractions may become so violent that rupture of the uterus will be imminent.

SKIN PIGMENTATION AND ADDISONIAN SYMPTOMS IN EXOPHTHALMIC GOITER.*

By P. SAINTON, M.D., and P. FAYOLLE, M.D.,

PARIS, FRANCE.

It is a well-known fact that some cases of exophthalmic goiter show a brownish coloration of the skin, suggesting Addison's disease, from which condition, however, their actual state can be distinguished at a glance by the exophthalmos and thyroid enlargement. Such pigmentation has not been given the place it deserves among the signs of Basedow's disease, and but little detailed study has as yet been made of it. Marked discrepancy exists between the statements of different observers as to its frequency. According to Denton Cardew it is met with in 70 per cent. of cases, whereas West observed it only in 16 per cent. Probably the first-named author counts as pigmentation the slightest change in coloration, while West speaks only of

* Summary of article in Bulletin médical, July 1, 1914.

marked hyperchromias. In a series of cases under the observation of the authors themselves, 25 per cent. of the patients showed pigmentary changes. That this ratio was approximately the correct one is shown by combining the observations of twelve observers, covering 517 cases, which showed 22.4 per cent. of cases with pigmentation.

Four principal varieties of this pigmentation can be distinguished: (1) Localized pigmentation; (2) more or less diffuse pigmentation; (3) Addisonian melanoderma with pigmentation of the mucous membranes, and (4) generalized pigmentation of Addisonian type without discoloration of the mucous membranes.

The localized form of pigmentation shows a predilection for the face. It consists sometimes of small brown spots somewhat larger than common nevi; in other instances, of brown patches generally extending in the region of the neck. The appearance presented is that of the chloasmic mask of pregnancy; indeed, it is not improbable that these two conditions arise in the same manner.

In some cases the discoloration is seen only as a ring around the orbit. The brown discoloration of the eyelids in these cases has been termed the Jellineck-Teillais sign. The rings surrounding the eyes are of a more or less deep-brown color, sometimes almost violet. The remainder of the face being unaffected, a peculiar appearance is presented owing to the contrast between the brown periorbital rings, with the enclosed prominent eyeballs, and the pale face. Jellineck's sign in one series of cases was found present in 15 per cent., in another series in 27 per cent. of all instances. It is often a feature of the earliest stage of the disease, and undergoes variations in the course of the latter, sometimes almost disappearing and returning later. Brown spots elsewhere on the body may coexist.

Diffuse pigmentation is almost always accompanied by discoloration of the face. In occasional instances it is not, as in the case reported by Sainte-Marie, concerning a woman who presented brown spots exclusively upon the legs and the dorsal surfaces of the feet. Where the pigmentation occurs in patches, the sites of predilection are, excluding the periorbital regions, the genitals in the male, the breasts in the female, the articular folds of the skin, and the perianal region. Surfaces of the body subjected to constant friction, *e.g.*, the waist surrounded by the corset, the legs at points of constant contact with the garters, and the skin of the wrist where a bracelet is worn, are also frequently affected. On the trunk large pigmented patches may occupy rather extensive areas; in some cases they surround areas of normally colored skin, the appearance of vitiligo being then presented. The coloration varies much in intensity; it may be slight, or grayish and of an earthy tint, or so deep as to suggest the stain of iodine on the integument.

Where the pigmentation is disposed in spots, its distribution is much more irregular and scattered, and is unequal on the two sides. The spots show only a slight coloration and are never very broad. They may coexist with small ecchymotic spots, presenting the aspect of a fine hemorrhagic infiltration. Jeanselme has reported a case in which pigmentation and scleroderma were simultaneously present.

There are cases in which the pigmentation is of the type of Addisonian melanoderma, with discoloration of the mucosæ and symptoms of adrenal insufficiency. Well authenticated cases of coexisting Addison's disease and Basedow's disease are, however, rather rare. The most typical one on record is that of Boinet, who found, in a Basedow patient with a manifest Addisonian tendency, fibrosis and hardening of the right adrenal, which was adherent to the inner surface of the liver. Eulenburg reported a case of Basedow's disease with discoloration of the mucous membranes. The authors themselves recently observed typical Addisonian symptoms in a man twenty-nine years of age, with regulation signs of exophthalmic goiter; the generalized pigmentation, with special intensity at the sites of predilection, had appeared at the same time as the goiter and tachycardia; distinct and numerous slate-colored patches were noted in the mouth; the "white line" was positive, the blood-pressure low, and asthenia and loss of weight pronounced. In addition to the infrequent cases of coexisting unmistakable Basedow and Addison syndromes, a large number of cases have been recorded in which bronze pigmentation was noted by the observer without his feeling justified in asserting definitely the existence of Addison's disease. Oppenheim reported a case of combined Addison's and Basedow's disease, but the patient greatly improved after a time and was able to endure pregnancy to a successful termination, Oppenheim thereupon revising his diagnosis, probably because of the patient's unexpected recovery. Mackenzie, Moutard-Martin and Malloizel, and Etienne have reported cases which would seem to belong under the term Addison's disease were it not for the absence of one important sign, viz., pigmentation of the mucous membranes. Siredey and DeJong cautiously presented a recent case as one of "exophthalmic goiter with generalized pigmentation," concluding that a lesion of the sympathetic probably existed; their patient, indeed, showed no white line, lowering of blood-pressure or digestive disturbance. In a personal observation, in the course of a rapidly progressing Basedow disease, the authors saw appear, toward the end, a melanoderma comparable with that of cases of Addison's disease; the slate coloration of the mucosæ was, however, lacking; the "white line" phenomenon was clearly present, but the low blood-pressure coexisted with a marked state of cardiac arrhythmia. In all such cases the pigmentation presents the features of that met with in hypoepinephria.

Reviewing the above observations, one cannot but be struck by the close relationship which appears to exist between them. All transitions between localized pigmentation and the cutaneous as well as mucous discoloration of Addison's disease may be observed. The cases seem to constitute the links of an uninterrupted chain stretching from Jellineck's sign to melanoderma, and in some cases, simultaneous presence and dovetailing of the different types of discoloration is to be noted.

Are these several types to be ascribed to different causes or to a single one, *i.e.*, is pigmentation in exophthalmic goiter to be attributed to a reaction of the adrenal apparatus or not?

The rôle of the adrenals in hyperchromia has been variously conceived of.

Guéneau de Mussy, already in 1881, thought that cutaneous discoloration in Basedow's disease might be due to adrenal inadequacy; in a second period, the melanoderma was ascribed exclusively to disease of the pericapsular nervous apparatus; at the present time views as to this question seem again to be shifting. Lucien and Parisot, in their monograph on adrenal syndromes, conclude that these organs actually play a rôle of great importance in the production of pigmentation, though many factors in the problem of pigmentation are still unknown. These authors take up the question whether the action of oxidases on the disintegration products of proteins does not transform them into melanotic pigment. Laignel- Lavastine expresses confidence in this conception when he describes a form of hypoepinephria characterized in particular by pigmentary disturbances, and in which the other symptoms are almost wanting. Thus it is not irrational to surmise that pigmentary disturbances in Basedow's disease are due to hypoepinephria, or—avoiding unwarranted assumptions—to an adreno-sympathetic disorder. Pigmentation is, indeed, not the only disturbance of adrenal origin that may be met with. The "white line," when systematically sought, is found to be not exceptional in exophthalmic goiter. The authors have seen it in cases presenting no cutaneous pigmentation. A markedly subnormal blood-pressure is also met with in some Basedow patients; in a personal case, the pressure rose when the Basedow condition improved. Either low or high blood-pressure may exist in grave exophthalmic goiter, and the question arises whether low pressure is not the special indication of the adrenal reaction, which appears not to be constant in these cases.

What is to be thought of the adrenal insufficiency in Basedow's disease? According to the Vienna school, represented by Eppinger, Falta, and Rudinger, such a combination of conditions would be a singular paradox, since from their viewpoint the stimulation of the chromaffine system will explain the sympathetic hyperexcitability of the Basedow case through an excessive secretion of epinephrin, which would be present in larger amount in the blood, and act on the sympathetic system. Clinical observations of coexisting Addison's disease and exophthalmic goiter, as well as of manifestations of adrenal insufficiency in the course of the latter affection, tend to controvert such an opinion. Pathologically Fabre has, in man, made the converse observation that in some cases of typical Addison's disease, with involvement of the adrenals, hyperplastic changes in the thyroid may be observed. In adrenal insufficiency, the thyroid, according to this, should react by hypersecretion. Gley and Quinquaud have recently shown that there are no reciprocal functional relations between the adrenals and thyroid. Coexistence of hypoepinephria and hyperthyroidism is in no way paradoxic.

Thus, there are at hand a certain number of clinical and pathological observations tending to show the presence of signs of adreno-sympathetic insufficiency in exophthalmic goiter. It is not illogical to consider the skin discoloration as a sign of an adrenal impairment in the majority of Basedow cases. Three possible ways in which the thyroid may be related to the adrenal condition can be formulated: (1) The combined presence of the

two syndromes is due to coexistent lesions of like nature; (2) it may be due to reaction of the two organs to an identical cause; (3) it may be due to a secondary reaction of the adrenals to the thyroid excitation. The first of these alterations is exceptional, existing, *e.g.*, where there is exophthalmic goiter of tuberculous origin and also tuberculosis of the adrenals. The second alternative has been held valid by Poncet, who believed that the so-called "inflammatory tuberculosis" (tuberculosis without tubercle formation) brings about hyperplasia of the gland-cells in the thyroid, but diminished functional activity of the adrenals. Such a combination of events is a possibility, but it seems more rational to accept the third alternative, a reaction of the adrenals consecutive to hyperthyroidism. As Mœbius stated, "the brown coloration undergoes successive increase and diminution in association with aggravation or improvement in the disease." Hunerfauth, Friedreich, and Chvostek have also seen the discoloration disappear along with recovery from the disease, and Etienne, in his case, observed the pigmentation growing less under the influence of hemato-ethyroidin treatment. Jellineck's sign and facial discoloration seem to become accentuated with the initial period of hyperthyroidism, and then rise and fall in intensity according to the subsequent course of the disease. All these observations constitute evidence in favor of a causal relation between the adreno-sympathetic reaction and the thyroid reaction. Undoubtedly, skin discoloration in Basedow's disease is the result of an adreno-sympathetic disturbance.

A CONTRIBUTION ON THE THYMUS.*

By OTTO LERCH, A.M., M.D., Ph.D.,

NEW ORLEANS, LA.

Bash was the first to observe after thymectomy in animals a retardation of growth, rachitic changes in the long bones, and psychic changes. Klose and Vogt, who operated on 54 dogs with a perfected technique during the period of greatest development of the gland, viz., on the tenth day, divided the time after its extirpation into three stages: (1) the latent, lasting from two to four weeks; (2) the state of adiposity, lasting from two to three months, and (3) the cachexia thymopriva and thymoprive idiocy, lasting from the third to the fourteenth month. The following are conclusions drawn from their exhaustive investigations: Thymic death is a general chronic tissue death with a prominence of adynamia, especially of the bones and brain. Severe chronic disturbances may be expected after thymectomy in children at the end of the second year, which will probably end with death at the time of puberty. Thymectomy ought not to be performed during the time of greatest development of the gland. Metabolism is not influenced by this operation, nor can blood changes be found. The skeleton

* Summary of article in the Medical Record, April 11, 1914.

remains dwarfed and the bones become elastic and fracture easily. Rachitis, osteomalacia, and osteoporosis may be found in the same individual due to a decreased precipitation of lime salts, which is prevented by an increase of nucleinic acid in the system. The temperature is not influenced. Nervous disturbances are observed soon after operation. Motion remains awkward and slow, the animals tire easy and become paretic, co-ordination is disturbed, and the electric excitability of the nerves is decidedly changed, resembling the condition caused by tetany in children. Sensation remains long intact, but is gradually lost, and the senses, especially the sense of smell in dogs, become blunted. Psychic changes commence shortly after operation and progress till the animals pass into the idiotic state. The brain is edematous and swollen, and microscopic examinations show degenerative and inflammatory changes in the nerves, cord, and brain.

The state of adiposity corresponding to the lymphatic diathesis in children is marked both by a great accumulation of fat and by a hyperplasia of spleen, pancreas, thyroid, testicles, and ovaries. Children with a hyperplastic thymus have not alone to suffer from the pressure of the organ upon the trachea and vessels but also from the intoxication which gives rise to the lymphatic-chlorotic constitution (thymolymphatic state). A hyperplastic poorly functioning organ causes symptoms that resemble those due to its deficiency or absence. A loss of resisting power to infection and to psychic insults is the consequence. These children often die rapidly with symptoms of shock.

The deficiency of lime salts in the bones after thymectomy (only half the normal amount being present) is due to an excess of acid, which causes their solution. This suggests the hypothesis that the thymus through nuclein synthesis neutralizes phosphoric acid and its complicated compounds are set free in the growing portions of the organism. This explains the edematous condition of the central nervous system. Colloids swell in the presence of acid and water; they are found in every cell of the body and the cells of the brain are especially rich in these substances. An excess of acid causes edema. Thymus extract increases the symptoms of intoxication, but alkalies given in sufficient quantity not only neutralize the excess of acid but may stimulate alkali production.

The feeding of thymus gland to normal animals increases their nervous excitability. The extract has been successfully used in the treatment of simple goiter, its administration not causing hyperthyroidism. Mikulicz, who was the first to use it in this disease, also reported cases of exophthalmic goiter treated with favorable results, but his experiments have been only in part confirmed. Probably good results are obtained when hyperplasia is associated with degeneration and a poor functional activity.

It is important to be able to diagnose disease of the thymus, as surgery may be lifesaving when the organ is hyperplastic. Stridor and asthma are of great importance in the diagnosis of thymic hyperplasia, and wasting in thymic atrophy. Examination with the Röntgen rays aids in some cases, though it is unsatisfactory in most. According to Bash and Rohm it is

impossible to make out with the X-rays the thymus in children, but hyperplasia of the organ can be diagnosed with this means according to Crotti, the author and others. Percussion gives good results, and thymic dullness can be made out with accuracy in children. Not only the absolute dullness, but also the relative dullness, that is, the whole form of the gland, can be mapped out in children and in *adults* up to old age if the author's method of percussion (drop method) be used.

The gland is located in the anterior mediastium. Its capsule is loosely fixed to the sternum and well united with the fascia of the large vessels. Its lower pole rests upon the pericardium, reaching usually to the fifth costal cartilage. The posterior surface lies upon the right auricle, accompanies the pericardium, ascending aorta, and aortic arch, passes over to the pulmonary veins, and reaches occasionally to the bifurcation of the trachea. It is in contact on the right with the vena cava superior and right innominate vein, and rests above the left innominate vein directly upon the trachea. Branches of the internal mammary, inferior thyroid, pericardial phrenic artery, innominate, and superior thyroid supply the gland with blood; while only a single network of veins empties from it into the internal mammary vein. This decided disproportion between the afferent and the efferent vessels is of special interest, considering that the organ is in direct connection with the aorta and that it shares in every disturbance of the general circulation. The lymphatics are large, arise in the substance of the gland, and are believed to terminate in the jugular vein. The theory of thymic asthma was founded upon the changing turgescence of the gland,—its capacity to become hyperemic, to press upon the trachea and hinder the return flow of blood to the heart by its pressure upon the large veins.

The actual form of the thymus made out by its relative dullness differs from the absolute somewhat as the relative differs from the absolute heart dullness. However, Blumenreich has proven that, like the absolute heart dullness, absolute thymus dullness possesses a distinct and characteristic form, which gives the exact position of the gland, and that changes of this are due to certain diseases. Considering only that portion of the thymus which is in direct contact with the anterior chest wall he finds its greatest width in line with the sternoclavicular joints. The dullness is small, between the second and third rib, and ceases between the third and fourth. The left half is usually larger than the right. The results of percussion in the living correspond closely to those obtained on the cadaver. Blumenreich was able to percuss the thymus dullness with certainty in children up to the fifth year, except in patients suffering from cholera and emphysema. In cholera patients this is probably due to the insufficient quantity of blood and lymph in the gland; in emphysema, to the distention of the lungs. After this time thymus dullness decreases in frequency, according to the same observer.

For many years the author had often found a dullness over the upper portion of the sternum and to its sides, which it was difficult to explain, and had taken it to represent an aneurism of the aorta, enlarged bronchial glands, or tumor. Later he was able for the first time to percuss the exact borders

of this dullness in a neurasthenic, a brother of a patient suffering from exophthalmic goiter, and diagnosed it as intracostal thyroid, on account of its resemblance to a substernal struma. However, finding this dullness constantly in hysterics and neurasthenics, the only patients which at that time he examined for this purpose, and soon being able to determine with accuracy the large vessels, he concluded that it corresponded to and represented the old thymic tissue, excessively filled with blood. He was forced to this conclusion by the form of the dulness, and further, because it clears up considerably in the horizontal position of the patient, whether he lies on his stomach or on his back, and increases in the upright position. In many patients it is visible, full, protruding, and frequently red. Occasionally distended veins may be seen which empty when the patient resumes the horizontal posture. The author found enlarged thymus dullness so frequently associated with hysteria and neurasthenia and enteroptosis that he was led to describe this symptom-complex as a distinct disease.

The position and form of the dullness are found by the author to be always the same, in the male and in the female, in the infant and the aged. The upper border corresponds to a line drawn through the sternoclavicular joints, and the lower border passes into the heart dullness. The author can confirm Sahli's observations on living children, in that the outer borders of thymic dullness are found beyond the borders of the sternum; they are not, however, represented by vertical lines, but by circular segments, which lie beyond the sternal borders. Usually the left is situated further out than the right, though the reverse condition may be seen as well. The figure is oval in shape and cut off above and below. The old thymus filled with blood and lymph, as well as the fully functioning organ in young children, is certainly of great importance during life with respect to the cerebral circulation, considering the disproportion between the large blood supply to the gland and the paucity of veins emptying into the internal mammary, a comparatively small vessel. It was formerly thought that the thyroid serves as a reservoir to regulate the blood supply to the brain; it is the thymus probably that possesses this function. The thymic dullness disappears after death in the adult and in a few hours nothing but pericardium and large vessels can be percussed.

Abstracts from Current Literature on the Internal Secretions

Epinephrin in the Treatment of Asthma.—In 5 cases the author injected 0.0005 Gm. ($\frac{1}{130}$ grain) of epinephrin subcutaneously for the relief of asthma, and found it far more effectual than any other measure previously used. One patient was given 1500 of these injections in the course of nine months. According to the author's experience, there is no cumulative action, and the system does not become accustomed to the

epinephrin. It seemed as effectual each time as at first, though it did not appear to have any effect in eradicating the tendency to asthma. The effect is the more pronounced, the earlier the epinephrin is used in the attack. Local applications and inhalations of epinephrin spray also proved useful, though far less effectual than the subcutaneous injections. E. Meulengracht (Ugeskrift for Laeger, November 20, 1913).

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Adiposis Dolorosa.—Report of a case in a woman of 43 years, who had, besides a general adiposity, small nodules, ranging in size from a pea to a bean, in the deep portions of the fatty tissue, which nodules were distinguishable by marked tenderness on palpation. The motor power of the patient was greatly diminished. There was a marked increase of bodily fatigue, which was also demonstrable in peculiar paresthesias. In the psychic sphere there were typical signs of depression. A series of symptoms pointed to an implication of the thyroid gland (Basedowoid state) and the hypophysis (alimentary glycosuria). The family history of the patient revealed severe nervous heredity of progressive degenerative nature. O. Klieneberger (Medizinische Klinik, November 23, 1913).

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Toxic Action of Pituitary Extract in the Newly Born.—A newborn child, after nursing about twenty minutes, was gradually seized with recurrent attacks of muscular contracture. These subsided but reappeared with great severity after a feeding two hours later. As there were no other signs or symptoms to account for the spasms, which set in after the child took the mother's milk, and as the muscular contractures were tonic and at regular intervals, resembling uterine contractions, the author concludes that they were probably due to pituitary extract transmitted by the mother's milk. Breast feeding was stopped; the convulsions ceased very gradually within two days, and did not return thereafter. Sheffield (American Journal of Obstetrics, February, 1914).

* * *

Hypophysis Cerebri and Diabetes Insipidus.—After experimental investigation, the author denies that secretion of the pituitary gland produces polyuria. Upon injection of mercury into the base of the pituitary gland of rabbits, a markedly increased secretion of urine resulted. Injection of colloid extracts, *i.e.*, extracts from the pars intermedia of the gland, produced no increase in the amount of urine excreted. In 1 case of diabetes insipidus, intramuscular injections of pituitary gland extract were followed by lessened excretion of urine and marked improvement. Autopsy revealed a tumor of the base of the brain involving the base and posterior lobe of the hypophysis. C. Römer (Deutsche medizinische Wochenschrift, January 15, 1914).

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Treatment of Exophthalmic Goiter.—Serum of thyroidectomized animals successfully applied, supplemented by a Nauheim course of car-

bonated baths, in 3 cases, 2 of them very severe. The patients were women of 29 and 51, and the exophthalmic goiter had resisted all other treatment. In the oldest patient a course of baths the year before had been ineffectual, but in the present year, the baths being supplemented by the serotherapy, remarkable improvement occurred. The much dilated left ventricle subsided to its normal size in all the cases, and the neck circumference diminished by 1.5, 2 and 2.5 cm. By commencing with small doses it is possible to improve the condition without causing by-effects. P. Stein (Gazetta degli Ospedali e delle Cliniche, October 12, 1913).

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Thyroid Treatment in Headache.—The author reports 11 cases of intractable headache due to hypothroidism in children. In 3 of these subjects the headache was the only sign indicating deficient thyroid secretion. In the other 8 there were somnolence, edema, constipation, anorexia, and pains in the joints and muscles. After thorough study of the symptoms and exclusion of all other possible causes, thyroid administration in such cases serves as a diagnostic measure. From 0.02 to 0.05 Gm. (⅓ to ⅘ grain) of thyroid may be given daily to children without danger. The diagnosis was borne out in all cases by the rapid improvement which followed the use of thyroid extract. Gaujoux (Société des sciences médicales de Montpellier, March 14, 1913).

* * *

Abderhalden's Reaction in Disease of the Thyroid.—This reaction was applied in 60 cases of abnormal thyroid functioning. Serum from patients with exophthalmic goiter or Basedowoid state constantly induced a positive reaction with tissue from the thyroid of a person with exophthalmic goiter. In a few instances the serum also digested thymus and ovary or testicle tissue. The serum of myxedematous patients likewise had the power to disintegrate ordinary thyroid tissue, and this was also the case with serum from patients with endemic goiter. The ferments elaborated in these conditions appear to be specific to an extreme extent. Lampé (Münchener medizinische Wochenschrift, September 20, 1913).

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Pituitrin in the Post-partum Period.—One-half to 1 c.c. of pituitrin intramuscularly, or injected very slowly and carefully intravenously, with control of the pulse after delivery of the placenta, as a prophylactic in the prevention of atony and hemorrhage, also makes it possible to dispense with Credé's expression of the placenta in many more cases than heretofore. In the third stage of abortions and miscarriages, injections of pituitrin are given with advantage. Contraindications are nephritis; arteriosclerosis with increase of blood-pressure to 140 mm. or more; cases of suspected coronary sclerosis, and uncompensating hearts. E. Vogt (Deutsche medizinische Wochenschrift, December 4, 1913).

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Action of Pituitary Extract from Castrated Animals.—Experiments with hypophysis extract from various animals after removal of the

ovaries or testicles, or merely of the corpora lutea, showed that while the effect was the same with 6 of the normal and the castrated animals, it differed materially when the extract was taken from the hypophysis of a gravid animal. Such an extract sometimes had a dilating and sometimes a constricting action on the vessels. The author suggests that the contradictory experiences with pituitary extract that have been reported may be explained by the fact that the extract in some cases came from an animal that was or had recently been gravid. Kleeman (Archiv für Gynäkologie, C., Nu. 2, 1914). * * *

Iodine Treatment in Cases with Pathologic Thyroid.—The author studied the changes in the blood-picture and in the thyroid in 15 patients with various pathologic conditions of the thyroid and one normal control, before and after treatment with iodine, as well as in 7 others not given iodine treatment. The findings emphasized the difference in the susceptability to iodine of a normal thyroid and an exophthalmic goiter. In 1 case exophthalmic goiter, with the typical changes in the blood-picture, clearly developed in consequence of application of iodine to a wound in the foot. Salis (Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, xxvii, Nu. 2, 1913). * * *

Acute Thyroiditis as the Cause of Symptoms of Exophthalmic Goiter.—The author reports 9 cases of infectious diseases, 2 of typhoid, 2 of sore throat, and 5 of influenza, in which the thyroid gland became involved. Clinically there were signs and symptoms of Basedow's disease, such as tachycardia, tremor, enlarged thyroid, Graefe, Moebius, and Stelwag signs, etc. The toxic conditions involve apparently not only the thyroid, but other internally secreting glands, a so-called "pluriglandular affection" being produced. Pletneff (Roussky Vratch, February 15, 1914).

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Action of Internal Secretions on the Uterus.—Report of experimental work apparently showing that the internal secretions of the hypophysis, thyroid, and also the placenta have a direct influence on the motor function of the uterus. In the serum before and during delivery there does not seem to be any accumulation of substances which promote the motor function of the uterus. But a substance displaying this action was present in extract of uterine tissue from a cow that was slaughtered during the act of delivery. H. Guggisberg (Zeitschrift für Geburtshülfe und Gynäkologie, lxxv, Nu. 2, 1914).

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Causation of Goiter at a Military Asylum in India.—Goiter in Sanawar, India, was shown by the author to be due to the presence of living micro-organisms in the water supplied to the children for drinking purposes. The disease can be eradicated, he holds, by the provision of a chemically and bacteriologically pure water. There is a possibility that most of the contamination in the water is derived from human fecal matter. McCarrison (Indian Journal of Medical Research, January, 1914).

Department on General Medicine

Original Article

PHYSICO-DYNAMIC REMEDIES.

A Working Outline of Remedial Agencies Based upon the Application of the Principles of Medical Physics.

By J. MADISON TAYLOR, A.B., M.D.,

Associate Professor of Non-Pharmaceutic Therapeutics in the Medical Department of Temple University,

PHILADELPHIA, PA.

THE term "physico-dynamic remedies" is offered to include a varied group of agencies capable of aiding the inherent forces of the body viewed as a living, sentient, machine. Their study constitutes a branch of bio-dynamics.

This presentation is restricted primarily to the phenomena of matter and energy, as displayed in a vitalized mechanism, a thing of mass and motion, of position, ponderability, velocity, elasticity, tone, temperature and the like, and as a manifestation of the transmission and transformation of energy.

Secondarily, there must also be considered biochemical phenomena, of tissue respiration, metabolism, and other fundamental attributes of a living organism. In brief, the postulate is offered that inherent propulsive and autoregulative energies are sufficient, in and by themselves when rightly conserved and directed, to go far toward restoring perturbed or disordered functions.[1]

I.

The object of the present communication is to call attention to the efficacy of so-called "auxiliary therapeutics," including all remedial agencies other than the internal use of drugs, medicines, bacteriologic products, and the like. It is my hope to show that clinical resources in this direction are, or can be made, so efficient that they shall be afforded the same scientific attention accorded other cognate subjects. That this has not yet been the case is due mainly to the deplorable fact that physico-dynamic agencies have

[1] An attempt is herein made to present an acceptable concept, or working basis, of those remedial agencies loosely grouped under the term mechanotherapy. The terms employed are often so inexact or inadequately descriptive that much misapprehension has arisen. Claims for recognition of results obtained have been so lacking in scientific precision as to have invited opposition and some well-merited contempt. If the basic principles are sound experiences, critically analyzed, there must emerge a reputable group of measures justifying research and, ultimately, confidence.

suffered discredit through exploitation by blatant irregulars, whose assertions are often far in excess of the truth, and yet whose undeniable successes have so far not received the critical tests of research scholars.[2]

II.

A large proportion of those who consult a physician do so for ailments not remediable by medicine alone. Some part of the distress is invariably psychic perturbation. Judicious evaluation of all factors is needed, balancing the real against the fancied, the right points of view *versus* the wrong. Now, while a fair proportion of morbid phenomena are psychic manifestations, mental confusion can be so subordinated by explanation and by dominant suggestion as to fade from consciousness, to return only when the persistent physical factors reassert themselves, as will occur unless these are remedied or removed.

Medicines at their best can achieve just so much and no more. When the utmost they are capable of achieving has been realized, there yet remains an extensive and persistent group of derangements which must be reckoned with, calling for other resources. Among causal factors are: Primitive developmental faults, residua of infection-processes, minor traumata, and abnormalities in metabolism, all inducing alterations in structure which involve physicodynamic effects.

To ignore the mechanistic sources or manifestations of these disorders; to assume that they will, in the fullness of time, pass away unaided, or by disregarding them, is to ignore important entities which, like Banquo's ghost, will not down, and is to commit a tactical blunder as well as a grave injustice.

Many of these distresses arise in mechanical alterations in tissue which can and should be corrected. Some part of them may be made to disappear by living a wholesome life, by freedom from over-fatigue, etc., *i.e.*, by taking suitable precautions. Nevertheless, another and larger part will not disappear (as daily experience proves) by regulation of conduct, but only after the originating lesion or morbid process has been searched out and subjected to remedial measures capable of modifying it.

Take, as one illustration, the protean group of vague pains labelled myalgias, fibromyosites, with the endless direct and by-effects this ill-defined group of miseries is capable of producing. What wanderings to and fro among the offices of reputable physicians, sanatoria, the camps or altars of hyper-optimists, do these vexed souls make, finally becoming

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[2] All credit must be given to the large gains achieved in recognizing infections, determining their nature, manifestations, the character and extent of their effects, and also, in the choice and application of efficient or promising remedies. So brilliant, fascinating, are these researches, eliciting as they do the collateral sciences of bacteriology, biochemistry, the resources of the modern laboratory, and the splendidly equipped hospitals, that they are assumed to be able to achieve most, if not all, we need to know of disease and its effects.

whimpering nihilists, railers at fate, or accomplished chronic invalids and detractors of medical science.

III.

The services which a clinician well versed in mechanical factors, including reflex disturbances, is capable of rendering are, among others, these:

He can supplement the excellent medical, dietetic, hygienic, psychoregulative, or laboratory work of his predecessors (or of his own), realizing that a human machine is out of gear which can, in important directions, be mechanically adjusted. While he may be no more successful than those predecessors in defining specifically just where and what the trouble is, he can often reach a satisfactory conclusion as to about where and what it is, and strive toward a practical solution by similar processes of exclusion, till the nature of the needed measures has been learned.

He, at least, avoids certain perils run by others. Among these are the use of ill-selected and powerful medicines which, after many failures, often induce in the pharmacotherapeutist a certain recklessness, till new, weird, and inadequately proven medicaments are essayed. What the remote or ultimate effects of these may be is oftentimes conjectural—sometimes seriously harmful. Likewise, the psychotherapeutist, unfortified with adequate information, may run aground upon the rock of suppressed complexes or deep-seated obsessions, and conclude that the whole problem is one of distorted sex-impulse, "libido," or other vagary of twisted consciousness. Meanwhile, the disordered mechanism remains *in statu quo ante.* The mechano-therapeutist sails in safer seas. He adheres more closely to the fundamental recommendation to "do no harm." At least, one's own conscience should be clear on that point. If one or another avenue proves futile, he can leave it and enter into another *viatum.*

IV.

Confusion seems to exist in the minds of the profession as to the scope and limitations of so-called "mechanical," "physical," or "auxiliary" therapeutic agencies. It is common to hear expressed opinions often diametrically opposite, not only as to what these agencies consist of, what they should be named, and what they are capable of accomplishing, but also as to whether it is proper or right to use or endorse them.

Grounds for this confusion are numerous, and some are pertinent. Among them are: (1) Exact knowledge of the physiologic effects of physico-dynamic agencies leaves yet much to be desired; (2) in some domains where fundamental physiologic facts are known, they still lack systematic, convincing formulation; (3) unfortunately, irregular practitioners have seized upon one or another group of mechano-therapeutic measures, appropriated them, loudly and mendaciously claiming results in excess of the possible; (4) most significant of all, the profession has conceived prejudices against mechanical therapeutics as a whole. Notwithstanding many of the procedures will be found in common use by reputable physicians the world over.

Against the adverse arguments or impressions there may be urged certain positive facts.

V.

Man is, in structure and differentiation, a highly complex or perfected mechanism, evolved on a higher plane than other organisms; animated by the divine spark of spirituality and intellectuality, but of similar or analagous animal conformation to his inferiors. He requires, to maintain both productive and reproductive energy and to regain the normal when disordered or diseased, intelligent conservation on the lines of his mechanical make-up. Mechanical measures are confidently employed to aid in reinforcing relaxed, injured, disintegrated tissues by specialists in constructive relief; in surgery, orthopedics, neurology, ophthalmology, and dentistry; by spa and sanitarium experts, and in other lines. Most of these agencies are best applied by specialists themselves. The surgical principles of mechanically reinforcing damaged, weakened, over-stretched or under-developed structures by fixation, immobilization or support; also by stretching, torsion, readjustment, or the freeing of rigid, contracted, inelastic structures, are of paramount value.

The above mainsprings of action can be utilized to advantage, alone or as auxiliaries, in relief of a host of disabilities coming constantly within the jurisdiction of the general practitioner. A cardinal maxim of surgery, to relieve one part from effects of irritation caused by pressure inducing reflex distress phenomena, by removing that irritation or pressure, is also capable of wide general application. Many forms of mechanical stimulation are efficient in producing important reactions in the body, capable of being elicited by no other means. When vital forces are depressed, thigmotropism (responsiveness to mechanical stimulation) can be exerted from different standpoints, any one of which may be sufficient to expedite repair; but when several are combined, useful forces are set free or reinforced, or can be directed with precision and advantage, achieving repair or cure.

VI.

The therapeutic equipment of the general practitioner is usually limited to what was learned in his student or early formative days. In the schools, emphasis is laid chiefly on the efficacy of drugs and surgical remedies. Later, some few add to their working equipment such mechanical devices as taste or opportunity permits. By far the most liberal offerings of remedies, reputable or other, come through advertisements of exploiters through medical journals. Abundant information is always afforded about articles for sale; fascinating statements are obtruded about objects or devices which medical men must be induced to think they need. Too little information, however, is procurable how one can render excellent (often the best, sometimes the only) service needed in an instance, by one's own hands, instruments always available, and simple mechanical procedures or devices. Yet it can be demonstrated that, with a practical training in those departments of

mechanotherapy which it is my purpose to present, the practitioner can give excellent, prompt and efficient service wherever he is and whenever occasion arises, not only in subacute and chronic disorders, but in a large group of acute, distressful, or diseased states.

The mental processes of the college professor, as a rule, react most readily to ideas bio-chemical rather than physico-dynamic. Some minds, both professional and secular, think more readily in integers of biology; some in integers of chemistry, of psychology, of mysticism, or of mechanics. Common sense, after all, is the deciding factor in the selection and application of one or other agency for relief or cure.

The majority of practitioners, even the best, use many rules-of-thumb, habit paths acquired long ago, half-remembered facts of physiology, pathology, and routine mental associations, echoes of ages past. Among these are a few sound principles of growth, change, differentiation and repair. Too often, however, these have become threadbare, disconnected, sadly needing new sources of awakening, revision and fresh suggestion. It is hard enough for most of us to appreciate, to understand and willingly adopt unfamiliar methods. Some wise ones learn to reject outworn ideas, and will then appropriate a new group of efficient agencies and maxims of procedure. In this quandary, measures based on physico-dynamic principles of diagnosis and treatment offer more of tangibility and universal applicability than do many of the newer biologic methods. They cover a large field of usefulness in everyday problems and are well worth anyone's attention and skill.

VII.

Reparative, rejuvenating, or reconstructive agencies may be divided into two groups, the *natural,* or conservative, and the *artificial,* or constructive. Among the natural remedies are: Rest, exercise, dietetics, improved environment, personal hygiene, regulation of conduct, open-air life; also isolation, change of scene, time, tender solicitude, and the ever forceful wellspring of hope. Among the artificial or constructive remedies, demanding expert powers, are: Chemical substances, drugs and medicines, mind control in its varied phases, explanation, persuasion, body-control, systematic physical training, manipulations and mechanical remedies.

The wise clinician often avails himself of many, sometimes of all these efficient agencies in the same instance. In determining when and how to employ mechanotherapeutic agencies, it will be found useful to begin by taking a long diagnostic viewpoint, and getting a perspective on grouped phenomena, to reason in integers of physiologic action and reaction, and to evaluate the mechanical on a plane with bio-chemical factors.

Inherent powers of self-protection, self-regulation and self-repair, react favorably to widely divergent forms of stimulation. As to how this auto-adjustment takes place no end of inferences are offered—half-demonstrated, partially proven, fading off into plausible conjectures. The present stage of mental evolution in medical science is well advanced in certain directions, but far behind in others. Many excellent means of functional

regulation, many efficient remedies in disease, are admitted to be of value, but avoided because not yet sufficiently impressed on the professional consciousness. This is particularly true of so-called "mechanical remedies." Because of this hesitation, due largely to unfamiliarity with the laws of physico-dynamics, many clearly demonstrable agencies for repair are viewed askance or condemned as smelling of charlatanry or faking. When one bolder, or of different mental equipment, grows enthusiastic from actual results obtained and does employ them, he is apt to be branded as a fakir, or at least as a crank. Perhaps optimism does carry some too far; over-enthusiasm may be a fault. It is, however, by and through this characteristic that most discoveries are evolved, valuable principles formulated, and important contributions made to world progress.

Shrewd irregulars show no hesitation. They are swift to see and recognize "a good thing," to use common sense and far-sightedness—and to make it pay. They take advantage of professional over-caution, doubt, confusion, and ignorance of physico-dynamics. They are well aware that the first principle of "business" is to claim results far in advance of the truth, and at any cost to get a hearing in high places. Note the noise the newspapers make for them!

VIII.

Strictly speaking, mechano-therapy embraces the use of each and every mechanical procedure or device whereby activation or retardation can be advantageously exerted on cell-energetics—on tissue-structures, nerve-centers, and fluids of the body. Among these may be included the whole domain of surgical procedures—the removal or replacement of damaged parts, using adjustment, support, mobilization, immobilization, or correction. Wherever local departures from the norm in tissue-tone occur, reinforcement of structures by external agencies is needed. This includes the compulsion of under-action or over-action; the supply of artificial aids to damaged or relaxed structures; the use of heat, cold, dryness, or moisture and, in particular, reflex responses; the use of agencies adapted for controlling afflux of blood to, or reflux of blood from, a locality by pressure or relief from pressure; the use of rest or regulated use of parts, or of the whole body, or the awakening of the spinal reflexes of contraction or dilatation.

In text-books the subject of mechano-therapy is rarely given fair prominence. When it is alluded to the explanations are as a rule couched in general terms, or worded so vaguely as to display lack of conviction or unfamiliarity with physiologic, rationale, indications, or modifications.

It will have been seen, however, from the above statements that the field of usefulness of physico-dynamic remedies is so large and varied as to have points of contact with all rational remedial systems, devices, and methods. Students can be expected to take small interest in them unless they are supplied (1) with a clear outline of direct and cognate subjects, duly classified and verified, and (2) principles of action which they can adopt and apply in concrete instances.

There remains the greatest enlightening agency of all, viz., demonstration on one's own person. It is to the highest degree desirable that the student shall not only see mechano-therapeutic agencies applied and apply them himself, but also *experience the procedures* in his own body. No one, for example, can get a right idea of manu-therapy, of balneo-therapy, of electro-therapy, and the like novelties, until he experiences the effects of the hands, baths, or electricity.

IX.

It is not the function, and rarely the purpose, of one who employs mechano-therapeutic measures to invade the domain of defined specialisms. Anyone is at liberty to appropriate working principles and apply them as his judgment shall determine—always with due regard to his personal limitations. There is, however, large scope for intelligent adaptations and specific applications.

It may be well to restrict the term mechano-therapy herein to the employment by the general practitioner of those rational agencies (other than drugs, psychotherapy, special laboratory products, and the like) which can be applied at almost any time and place, either by his own hands or by means of relatively simple equipment, or those with the use of which he has been able to achieve some special skill. It is also desirable to learn how to direct economically the special skill and equipments of others who possess them. Above all, one should attain judgment in deciding when to consult and how to make use of experts, as well as how to combine mechanical with pharmaceutic and psycho-therapeutic measures.

It is well to *leave to those specially trained,* and of large experience in restricted fields of therapeutics, the systematic use of agencies strictly classifiable as mechanical, among which are: Electro-therapy, Röntgeno-therapy, hydrotherapy (balneo-therapy), thermotherapy, climato-therapy (which again may include spa-therapy and sanitorium-therapy), phototherapy, (actino-therapy, helio-therapy), and radio-therapy. There yet remains, however, a most respectable and efficient group of agencies modified from methods of the experts enumerated. Their chief distinguishing characteristic is that they can be applied by any competent clinician at any time and any place when need shall arise.

It must be held in mind, moreover, that these *mechano-remedial measures are seldom sufficient alone;* yet without them, too often, whatever else is used will prove insufficient. One or another of them, judiciously employed, may raise the index of vigor appreciably, or turn the tide of endeavor to victory. It should be remembered that *one's own faculty of observation and evaluation must be trained* to decide when, where and what physico-dynamic remedy is clearly indicated.

Conclusions.

Physico-dynamic remedies are agencies involving the choice and application of physico-mechanical energies, explainable by the laws of physics, and employed to repair disturbed structures and functions.

They have already attained a high plane of efficiency and confidence, but are still at a disadvantage in several directions. Among the disadvantages are some real, and more prejudicial ones, which an increasing open-mindedness will dissipate.

Actual disadvantages are such as obtained for pharmaco-dynamics in pioneer days: Lack of scientific provings, of accurate observations, of precise measurements and tests.

Implied disadvantages obtain through hyperbolic assertions of mystery-mongers, miracle workers, and spa exploiters, whose shifting claims range all the way from frantic, vacillating assumptions to radio-active properties, all tinged with commercialism.[3] It is a waste of time, strength and morale to become vexed at these trouble makers; they represent inevitable phases in scientific evolution. In all these overblown "systems," principles of action exist that are worthy of examination. Medical procedures have ever undergone changes representing conditions of demand and supply. The tradition of secrecy evolving from the Hippocratic oath has impaired that open-mindedness so necessary for investigation of every sort of promising evidence and the appropriation of whatever justifies confidence.[4]

[3] Recently, we have met an outcrop of all sorts and kinds of mind healers, bonesetters, backtwisters, physical culturists, starvation or weird diet curers, heliotherapeutists, and the like. The money hunting purposes of their methods are peculiarly distasteful to the conscientious protagonists of scientific medicine, and obscure the hidden grains of truth in the meantime pre-empted.

[4] See papers by the author dealing with some subjects in the outline, *e.g.*:

Management of Exhaustion States in Men: International Clinics, vol. ii, 17th Series, 1907.

The Essence of the Rest Cure: Monthly Cyclo., Jan., 1908.

The Hand as a Therapeutic Agent: N. Y. Med. Jour., Feb. 8, 1908.

Rational Treatment of Splanchnoptosis: Med. Record, Oct. 17, 1908.

Treatment of Occupation Neuroses and Neuritis in the Arms: Jour. Amer. Med. Assoc., July 17, 1909.

Respiratory Education: Dietetic and Hygienic Gazette, Feb., 1909.

Motor Education for the Child: Pop. Sci. Monthly, March, 1911.

What is the Attitude of the Medical Profession Toward Osteopathy: Monthly Cyclo., Feb., 1911.

Remarks on the Treatment of Chronic Disease: Monthly Cyclo., Feb., 1912.

Is it Worth While for Middle Aged Men to get into Condition? Dietetic and Hygienic Gazette, 1911.

Physician and Masseur: N. Y. Med. Jour., April 13, 1912.

Psychic Hypertension; Restoration of Mind Control by Motor Training in Relaxation: Med. Record, Oct. 17, 1912.

Psychotherapy: Monthly Cyclo., Oct., 1912.

Reconstructive Personal Hygiene: Monthly Cyclo., May and June, 1914.

Cardiovascular Renal Regulation by Other Means than Drugs: International Clinics, 1914.

Orthotherapy: Normality of Posture as a Factor in and out of Health: Monthly Cyclo., Jan., 1914.

Summary.

There follows a summary of the departments of the subject: Certain of the twelve divisions I have already elaborated, and others it is my intention to present as separate papers.

I. Devices to Reinforce or Support Under-developed, Overstrained, Weakened, or Paralyzed Parts.

Among these are so-called orthopedic or surgical devices applicable to a variety of medical problems constantly presenting.

II. Devices which Act as Substitutes for Nature; Physicodynamic or Mechanical Equivalents.

Among these are to be mentioned glasses for the eyes; artificial teeth, crowns, etc.; artificial limbs; special garments, shoes, etc. Costume deformities and costume as a remedial agency deserve presentation.

III. Removal of Offending Parts, Inherent or Acquired.

This concerns parts which interfere mechanically with function or induce distress—the domain of specialists, many forms of which come within the power and duty of the general practitioner to recognize and direct.

IV. Agencies for Altering Mechanically or Reflexly, Blood- and Lymph- Currents, Whereby Distribution and Elimination Are Activated.

These include pressure (compression and relaxation near nerve-centers), suction, impacts, concussion, posture, gravity, heat, cold, local freezing, particularized motions, exercises; also rest, skin friction, colon irrigation, venesection, etc.

V. Posture as an Aid to Function (Orthotherapy).

Eliciting and regulating the power exerted by employing or by gaining or regaining correct postures, by effecting economies of functioning, of organic competence, and of general health, and by securing repair of diseased states.

VI. Kinesthetics and Kinesitherapy: Education of Static Structures—Muscles and Joints.

The function of a muscle in motion; hence loss of function is restored only by right motions; hence follow increase of energy, power, co-ordination, circulation, katabolism, anabolism, etc.

This includes remedial agencies involving the employment of systematized action movements; exercises, passive and active, and also of their corollaries: *Akinesia and akinesitherapy*—Rest, systematized rest treatment, absolute and partial, etc. Of special importance is mobility of all joints and skeletal structures, as well as elasticity of muscles and other pliable tissues, notably of the thorax and neck. The aim should be to correct organic adjustment and to encourage circulation and the passage of nerve-impulses, etc.

VII. Education of the Respiratory Apparatus.

An important influence is thereby exerted on under-developed, neglected

organisms, and on those handicapped through the effects of disease, *e.g.*, of the pleura and lungs. Such procedure is also useful in relieving passive congestion in correlated structures and vitiation of blood and lymph. It is also an aid in securing mental control in psychic hypertension, in anxiety, and in other psychoses. Respiration should be through the nose, hence the need of full competence of the nasal passages, necessitating on occasion, removal of obstructions, etc. The thorax should be fully mobile, to enable the combined functioning of direct and contributory structures to act as a pump to the lungs and heart.

VIII. Manipulation of Structures (Manutherapy).

This includes the application of reputable, well-attested methods of using the hands as remedial agencies, all the way from sympathetic touches to expert readjustments of structures, to which are being applied an increasingly large group of complex names, from massage (a wholly inadequate term), to the most bizarre and meaningless compound words and phrases. The objects (among others) of manutherapy, are:—

(*a*) To induce surface reactions—sensory, motor, circulatory, thermodynamic, etc.

(*b*) To overcome contractures, adhesions, limitations of movements; to reduce local densities and rigidities; to dissipate passive congestions, etc.

(*c*) To elicit reflexly vasomotor activation, directly by surface friction, by subdermal traction, etc.

(*d*) To elicit the visceral reflexes of contraction or dilatation through the cerebrospinal nervous system.

(*e*) To alter the caliber, the size, or the transmission of the contents of, hydrostatic mechanisms, tubular and other, arterio-venous, lymphatic, intestinal, colonic, etc., through stimuli to the vasomotor apparatus and the autonomic nervous system.

IX. Education and Regulation of Organs of Special Sense.[5]

(*a*) Primary or developmental; percepts and interpretation.

(*b*) Secondary or re-educational; correcting wrong habits and the effects of limitation or of strain.

(*c*) Special training of impaired sense organs.

X. Education and Regulation of the Cardiovascular Renal Organs and Correlated Structures.

The procedures here involved are similar to some of those recommended under IV, though selected and adapted to meet particularized needs.

XI. Education and Regulation of the Digestive Organs.

This includes the training of static and motor mechanisms to regain

[5] The senses were formerly considered to be five in number: Sight, hearing, feeling, taste, and smell. Today the number of senses recognized by the psychologist is in the neighborhood of eighteen (18). Closely allied are the kinesthetic sensations, evolved during neuromuscular activity. The static sensations report the movements of the body as a whole.

neuro-muscular tone, afford support to organs, and relieve abnormalities of splanchnic circulation, as well as rational dietetics.

Amounts as well as kinds of food are to be considered; likewise the proportions of fluids, comminution, mastication, insalivation, combinations, etc.—from a mechanistic rather than bio-chemical standpoint.

XII. Education and Regulation of Highly Specialized, Interacting Structures Whose Functions are Evolved Through Elaborated Associations.

This constitutes an important domain for study and conservation, involving as it does special proficiencies and superproficiencies; expertness in the performance of complex acts, in perception and apperception, in correlations, niceties of adjustment, in co-ordination, adaptation, balance, purposive automatisms, as well as interpretation and execution.

Disturbances of these elaborated mechanisms lead to impairment or disorder in widely separated parts or functions, producing disablements at variance with expectation, and hence demanding attention to causal factors, not only immediate, but remote.

Repairs of these complex disturbances usually require particularized training (over and above any specific treatment) in the psychomotor, neuromuscular, and special sense domains; otherwise, the worst effects produced on differentiation, proficiency, and in self-confidence remain unrelieved.

Among the conditions to be considered are: Speech defects, amnesia, aphasia, inarticulate speech, stammering; acquired inco-ordination impairing proficiency in the arts and industries; derangements of mind, chiefly psychomotor or fear psychoses, or in volition as affecting execution; also such complex disturbances as grouped phenomena in the naso-pharynx correlated to sex organs in women and the prostate in men; in tabes, Parkinsons disease, hemiplegias, athetosis, astasia abasia, tics, etc., bettered by static and motor education.

Cyclopedia of Current General Literature

Coccygodynia, Treatment of.—The prognosis of coccygodynia has hitherto been better in the traumatic cases than in those of frank neuralgia or neuritis. The writer confidently predicts that the treatment he proposes will render the latter equally amenable to treatment. The treatment is based on the suggestion made by Schlosser in 1907 to inject 70 to 80 per cent. alcohol in sensory nerves, thereby causing their degeneration, a procedure practised with marked success in trifacial neuralgia. The technique is simple and can be carried out in the office under strict aseptic precautions. The patient, with bowel empty, is placed on a table in the Sims position and the skin about the coccyx painted with tincture of iodine. A 2-c.c. Luer or similar syringe is filled with 80 per cent.

alcohol and armed with a 2-inch needle. The right index finger is now inserted into the rectum and the point of maximum tenderness determined by counter pressure with the thumb outside. Maintaining the finger in the rectum to guard against puncture and as a guide, the physician introduces the needle through the mid-line directly to the painful spot, and injects slowly 10 to 20 minims (0.6 to 1.2 c.c.) of the alcohol. The needle is then withdrawn, and the puncture sealed with collodion. The pain from the injection lasts a few minutes and is followed by a dull ache which may last a day or two. From 3 to 5 injections are usually required, at intervals of about one week. The writer reports 7 cases, all women, treated from two months to four years before. They required 3, 4, or 5 injections each at intervals of about one week. Relief was prompt and complete, and all the patients have remained well. F. C. Yoemans (Transactions of the American Proctologic Society, 1914).

* * *

Constipation, Treatment of. — A combination of phenolphthalein and agar, containing 3 per cent. of the former, and taken twice a day, or sometimes three times a day, in teaspoonful doses, is very beneficial. An advantage of such agar preparations is that the remedy in the agar does not come out quickly from the agar substance, but is absorbed slowly by osmosis, and in this way covers a large area of the intestine. The agar also takes up water and lubricates the fecal matter.

This preparation should not be ground up too fine; if it were in the form of a powder it would be partly absorbed and less efficacious. A combination of rhubarb agar, also in about 3 per cent. strength is slightly weaker than the phenolphthalein-agar, and is taken in the same quantity. Although as a rule one should not use too many remedies to cure constipation, mild cathartic remedies can and should be given, the patient being impressed with the importance of taking as little as possible—trying a certain amount for a while, and then reducing it slowly.

Along with the mild cathartic remedy one should also institute a proper diet, as well as physical means of treatment. Saline injections into the bowel if used, should be taken in the evening; the patient may have a bowel movement spontaneously, and if not, can then take the injection. Six to 10 ounces of olive oil at blood temperature, injected into the bowel, and retained over night, can be used every night for three or four weeks, then every other night for three weeks, and then twice a week for a long period. Sometimes this treatment—especially important in spasmodic forms of constipation—yields excellent results. Max Einhorn (New York Medical Journal, May 30, 1914).

* * *

Diabetes Mellitus, Treatment of.— In overcoming the tendency to intestinal toxemia in this affection, the author has had good results from the administration of massive doses of cultures of the Bacillus bulgaricus, though the number of cases is as yet too few to yield definite conclusions. In conformity with Knowlton and Starling's recommendation, he has also administered 10 to 20 grains (0.6 to 1.25 Gm.) of an active extract

of pancreas, every four hours on an empty stomach, with decided and rapid reduction, and even complete absence of glucose in the urine in 2 cases, while in 2 others there was apparently no effect. Therapy along this line should, theoretically, yield good results, but the difficulty of obtaining absorption of the pancreatic hormone before it can be destroyed by the gastric juice will always remain a difficult problem. Until this hormone can be isolated and preserved in such a manner that it can be administered hypodermically—when the ideal drug for the disease will have been found—strict regulation of the diet will have to be relied upon, and for successful results one must consider the proteid metabolism, as well as the carbohydrate metabolism. Allan Eustis (American Journal of the Medical Sciences, June, 1914).

* * *

Hemoptysis, Classification and Treatment of.—According to the author's observation hemoptysis may be divided into the following classes: 1. A frank hemorrhage where a vessel of some size is opened and the blood flows out freely. The blood in these cases is nearly always bright red. The cause of this type is the erosion of a vessel or the rupture of an aneurism.

2. A bleeding which comes on coincidently with the expulsion of a necrotic mass. This is usually preceded by several days' rise of temperature and symptoms of increased absorption of toxins. The real cause of the bleeding in these cases is that the destructive process goes on rapidly and the wall of the abscess breaks before the vessels have been obliterated by the inflammatory process. The bleeding rarely proves serious.

3. A type in which there is no distinct quantity of blood, but the mucus raised is mixed with color giving it a characteristic dull, pinkish color. This the author considers as coming from the small vessels in the wall of a cavity. This form requires no special treatment.

4. The type of hemoptysis in which the patient keeps expectorating mouthfuls of blood for several days, sometimes for weeks. The blood may be bright red, especially when the quantity is ½ ounce or more; or, as is more common, somewhat dark in appearance. This type is looked upon as being due to a congestion. It calls for a distinctly different treatment from the types where vessels are open. It does not prove fatal, but serious damage seems to occur when it continues for a long time.

In the treatment of types 1 and 2, both mental and physical rest should be insisted upon. The mental rest can oftentimes be obtained by reassuring the patient. Where this cannot be done, a hypodermic injection of morphine is to be resorted to, the author usually employing $\frac{1}{16}$ grain hypodermically. This small dose seems to have a decidedly sedative action and avoids the severer blunting effect on the nerve endings of the respiratory tract, which follows larger doses. Great harm is often done in hemorrhage by large and repeated doses of morphine. It prevents the patient clearing out the blood from the respiratory tract, and thus favors a complicating pneumonia.

For the maintenance of physical

rest the patient should be put to bed in a comfortable position, usually on his back, with shoulders a little high; and, if the bleeding has been severe, no movement should be allowed. He should be kept quiet until all danger of recurrence has disappeared. After absence of bleeding for twenty-four hours, the nurse should change his position by rolling him over on his side and holding him there with a pillow. He should not be allowed to sit up in bed until all color has disappeared from the sputum for at least three days.

By way of medication, reliance should be placed upon tincture of veratrum viride, 5 drops every three hours until the pulse slows, then reducing the dose to 4 drops or 3 drops every four or five hours. The veratrum is somewhat slow in action, and in order to get an immediate effect, the author uses nitroglycerin, $\frac{1}{100}$ to $\frac{1}{50}$ grain, dissolved on the patient's tongue.

Pituitrin seems to promise well insofar as observed. In several patients treated with it the bleeding seemed to stop more promptly than usual.

Artificial pneumothorax is often valuable in types 1 and 2.

For the type of hemoptysis designated as "congestive" (type 4), the author advises a different line of treatment. It is difficult at first to be sure that a hemoptysis belongs to this type; it is safest to treat every case at first as though it were an open vessel. If the condition does prove to be of the congestive type, the patient is kept quiet, as those suffering from the other types, but instead of veratrum and nitroglycerin, a circulatory stimulant is used. These are the cases, the author thinks, that obtain decided benefit from the adrenal preparations. Digitalis also works well at times, and strychnine is sometimes of decided benefit.

Obstinate constipation follows a hemorrhage in many instances, and ordinary cathartics in these cases fail to act. In several severe hemorrhages it was necessary to remove the feces from the bowel mechanically. The rhubarb pill seems to act the best of all remedies (5 grains of rhubarb, three or four times a day). The author has also seen a few cases where it was necessary to catheterize after hemorrhage. F. M. Pottenger (American Journal of the Medical Sciences, June, 1914).

* * *

Placenta, New Method of Loosening.—A method has been devised which avoids altogether the introduction of the hand or any instrument in the uterus. It consists of the injection of sterile saline solution into the retained placenta through the vein of the umbilical cord. The vessels fill, and the placenta gradually becomes enlarged in all directions, like erectile tissue. Finally, the vessels of the chorionic villi burst, allowing the injected fluid to run out from the uterine surface of the placenta. This is not the chief factor in the loosening of the placenta—although it lessens the area of attachment—but the organ, as its size increases, tears away the small bridges of tissue that have been holding it in place. The fluid accumulation behind the placenta forces it away from the uterine wall and stimulates uterine contractions which expel it. Gynecological Clinic of Buenos Ayres (Münchener medizinische Wochenschrift, Nu. 12, 1914).

Pulmonary Tuberculosis, Autoinoculation in.—From observation of 746 sanatorium patients the author concludes that the fewer the fever days in pulmonary tuberculosis the better the chances of recovery. Patients who have had no autoinoculations evidenced by fever during sanatorium residence have a very high recovery rate. Patients who finally achieve a stable temperature after a period of occasional autoinoculation do not avoid relapse so successfully as those who obtain arrest without such period of autoinoculations. It should be one's aim to avoid rather than to induce fever reactions, or autoinoculations, in pulmonary tuberculosis. H. L. Barnes (American Journal of the Medical Sciences, April, 1914).

* * *

Pylorospasm in Infancy, Treatment of.—These patients do better on breast milk than upon any other food. In severe cases occurring in young infants every effort should be made to obtain human milk. If the mother's milk contains a great deal of fat, it may be allowed to stand and some or all of the cream removed. When mother's milk absolutely cannot be obtained in sufficient quantities, more or less completely peptonized cow's milk may be substituted for part of the feeding. This milk may be 1 part cow's milk and 3 parts water, one-third cows' milk and two-thirds water, peptonized from five to twelve minutes, or the weaker percentages of modified milk may be used; if these fail, well-diluted malted milk or condensed milk diluted with water, 1 : 12 may be tried. In the severe cases in which practically everything is vomited, the food should be given by means of a stomach-tube, as it is much more likely to be retained when thus given. With any change of food there is retention of the food for two or more feedings, and sometimes eight, twelve, or sixteen hours elapse before the vomiting recommences. The frequency of feeding depends upon the amount that can be given. It is a good plan to gradually increase the size of the feeding, giving as much as can be retained. The child should be kept flat on its back immediately after feeding, and not handled any more than is necessary.

The stomach should be washed out once or twice a day or oftener, according to the amount of mucus present, and it is sometimes advisable to use a sodium bicarbonate solution, 1 dram to the pint, in cases where the mucus is thick and stringy or where the vomitus is intensely acid. Rectal feeding may be used in bad cases, but is not very satisfactory. Rectal administration of plain water or in some instances salt solution is, however, of great benefit, and may be used in all cases where the amount of fluid vomited is very great.

The temperature of the child should be taken and hot-water bags or other devises used as may be necessary. Counterirritation over the epigastrium by means of weak mustard plasters, spice bags, or some form of warm application may be tried.

Atropine is far superior to any other form of medication, given in doses of $\frac{1}{2000}$ grain at intervals of four to six hours, or even shorter intervals. If no therapeutic effect is obtained, the dose may be cautiously increased until the first symptoms of drug action are noted, after which

the amount may be diminished and the smaller doses, if found useful, continued over a considerable length of time. When codeine is used, 1/600 grain may be administered at the start, and the amount increased cautiously. If the deodorized tincture of opium is preferred, 1/40 minim may be the starting dose. John Ruhräh (American Journal of the Medical Sciences, April, 1914).

* * *

Sprue Treated with Streptococcal Vaccines and Emetine.—In sprue the author administered a vaccine prepared from streptococci derived from the mouth ulcers, where they were found to be present in nearly pure culture, and also emetine hydrochloride hypodermically. In 2 severe and chronic cases the results of this treatment were so strikingly favorable as to appear worthy of record. In the first case, *e.g.*, ½-grain doses of emetine hydrochloride were injected hypodermically every other day, and soon after increased to 1 grain. After 2 or 3 injections, and before the vaccine had been commenced, the stools became much less frequent and of better consistency and color. After 8 injections they had become healthy and numbered only 1 or 2 a day. In the meantime the streptococcal vaccine was begun, 50,000,000, soon increased to 100,000,0000, being injected once a week. The discharge of pus from the gums rapidly decreased, and in a few weeks completely disappeared, and at time of writing had remained absent for the last four months. Some superficial soreness and redness of the tongue subsequently appeared, from which a streptococcus was also cultivated. A vaccine made from this removed the unhealthy condition of the tongue within a few days, and the patient thereafter was in greatly improved general health.

In view of the very unsatisfactory results of other forms of treatment in sprue (including that by yellow santonin), the rapid and great improvement in 2 successive severe and very chronic cases is remarkable. In the first case the improvement certainly commenced as soon as the emetine injections were begun, and before the mouth streptococcal vaccine was administered. Yet the author is inclined to attribute much of the ultimate success to the vaccine. In the second case a relapse occurred after improvement had followed the emetine injections, and it was not until the mouth condition had been improved by 2 doses of the streptococcal vaccine that rapid and continued improvement of the stools set in. A milk diet was also of undoubted service in this case, though not found necessary in the first. The author does not look on emetine as a specific in sprue, such as it undoubtedly is in amebic dysentery and hepatitis, but regards it as of some value in certain cases of the disease. One should bear in mind that "sprue" is a purely clinical term, and that there may be more than one causative agent, as in "dysentery." Leonard Rogers (Lancet, June 6, 1914).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Acne vulgaris in childhood or adolescence responds well to thyroid treatment. Thymus employed with advantage in cases with enlarged thyroid and rapid heart. *Morris.* Page 11

Acromegaly. TREATMENT. Case of acromegaly in which thyroid treatment caused headache, dizziness, vomiting, and melancholia to disappear, while pituitary treatment always caused their return. *Salomon.* 30

Amenorrhea. TREATMENT. In amenorrhea, flooding, dysmenorrhea, etc., mammary extract treatment often proves corrective. *Berkeley.* 20

Anemia. TREATMENT. Joint administration of ovarian extract with iron and arsenic in anemias, including chlorosis, in females, recommended. *Bandler.* 91

Angina Pectoris. TREATMENT. Concussion at level of seventh cervical vertebræ, together with hypodermic injection of 1/10 grain (0.006 Gm.) of pilocarpine, to increase vagus tone, gives relief more promptly than does morphine. *Jarvis.* 160

Appendicitis. DIAGNOSIS. Following sign found valuable in diagnosis of appendicitis in small children, who show no sign of localizing appendicular pain: Upon light pressure over both iliac fossæ, the child executes slight movements of the right leg. If the pressure be increased, the right leg becomes rigid and irregular movements of the left leg are executed. Often the face suddenly flushes when pressure is made with the finger over the appendix. *Veau.* 477

Argyria. TREATMENT. Hexamethylenamine, 10 grains (0.6 Gm.), caused marked improvement in the patient's coloration in a case of argyria due to collargol. *Crispin.* 542

Arthritis Deformans. TREATMENT. Gradual but permanent improvement noted in a number of cases after administration of thymus extract. Pain and swelling disappear and appetite returns. Nucleoproteid extract much preferable to crude gland. Treatment should cover several months, and small doses be continued for some time after apparent cure. *Berkeley.* 20

Bronchitis, Acute. TREATMENT. Inhalations of recently prepared tincture of iodine from wide-mouthed bottles found to cure bronchial catarrhs in four days. Inspirations —from 4 to 8 or more at each sitting—to be more or less deep according to severity of case. Inhalations to be repeated 5 or 7 times a day. If much mucus, expectoration to be assisted by usual remedies. In children iodine tincture may be dropped on pieces of cotton to be laid on pillow (over oilcloth) while patient sleeping. *Torri.* 303

Cancer, Gastric. DIAGNOSIS. Positive or negative diagnosis made by serial röntgenography in 616 cases. Of 97 cases operated on, diagnosis found absolutely correct in 94. Gastric cancer at any stage, or indurated gastric ulcer, can be detected by this method as accurately as renal calculi or bone fractures. *Cole.* 301

Chancroid. TREATMENT. Fuchsin in 5 per cent. ointment with petrolatum found very efficient in 9 cases, healing them in less than two weeks. The average duration of treatment was eight days. The parts are cleansed and the ointment is to be applied by the patient twice daily. If the prepuce can be brought over the glans no dressing is required. Fuchsin, however, stains linen red. *Kantawala.* 604

Conjunctivitis. TREATMENT. Instillation of a 1 per cent. solution of ethyl hydrocupreine hydrochloride, allowed to remain one-half minute, recommended in pneumococcic conjunctivitis, dacryocystitis, and corneal ulceration. *Sattler.* 481

Coryza, Acute. TREATMENT. 1. Pill of morphine, 1/6 grain (0.01 Gm.), and a small dose of nitroglycerin. 2. In two hours, 10 grains (0.6 Gm.) of acetylsalicylic acid. 3. Hot bath. 4. On following morning, magnesium sulphate. 5. Locally, an ointment containing menthol, methyl salicylate, and oil of wintergreen in a lanoline base, to be sniffed back in nostril frequently, and followed by chloretone inhalant. 6. If discharge, feverishness, and periodic headache persist after a few days, patient should inhale steam from boiling water to which menthol and alcohol have been added. *Wilson.* 484

Where coryza does not tend to early recovery; where there is recurring coryza with obstruction in nares; where there is a unilateral discharge or where there is headache not relieved by glasses or purges, sinus involvement should be suspected. Treatment: Careful cocainization (1 to 2 per cent. solution) of swollen mucosa. Internally, 5-grain (0.3 Gm.) Dover powders every three hours; cathartic salts. Ice-bag to sinus. Hot baths and hot nasal irrigations after the cocainization. *Stauffer.* 676

Delirium Tremens. TREATMENT. (1) Withdraw cerebrospinal fluid by lumbar puncture in amounts as large as possible—50 to 60 c.c. (2) Inject with syringe an equal amount of sterile 1 per cent. sodium bromide solu-

tion. Immediate improvement in delirium usually occurs, followed by temporary return and then permanent disappearance of delirium. Relapse occasionally after a few days; usually controlled by repetition of injection. *Kramer.* Page 110

Diabetes Insipidus. TREATMENT. Case in which injections of pituitrin caused marked, though but temporary, inprovement. *Farini.* 277

Diabetes Mellitus. DIAGNOSIS. Frommer's test recommended for detection of small amounts of acetone. Treat about 10 c.c. of urine with 1 Gm. of sodium hydroxide in substance and without waiting for it to dissolve; add 10 or 12 drops of a 10 per cent. solution of salicylaldehyde in absolute alcohol. Heat to 70° C. In the presence of acetone, marked purple-red color develops at zone of contact with alkali. This test indicates presence of 0.000001 Gm. of acetone. Urine must be diluted so that its specific gravity is about 1.01. *Muhlberg.* 232

TREATMENT. Therapeutic value of an "easy nitrogenous diet" pointed out, *i.e.,* of one consisting almost exclusively of milk and its derivatives, cereals, fruits, and vegetables. Such a diet partially takes off burden of nitrogenous metabolism from liver and tends to relieve its instability as regards glycogenic function, therefore often causing glycosuria to disappear. *Cornwall.* 110

Dry vegetable diet recommended for cases in a state of acidosis. Patient to take daily 10 ounces (300 Gm.) of dried legumins (peas, beans, lentils), 5 ounces (150 Gm.) of butter, 3 to 6 eggs, and 3 to 6 aleuronat or gluten rolls. Green legumins may also be given. Soy beans may be used. This diet to be followed at least 3 days at a time. The starch it contains is better utilized than that of other foods, glycosuria often being not higher than under a diet poor in carbohydrates. The diet also combats nitrogenous loss; somnolence and anorexia, where present, often disappear, and diaceturia diminishes. *Labbé.* 300

Diphtheria. TREATMENT. Iodine ointment used locally in 30 cases. With 2 cotton pledgets secretions and false membrane were first removed and the surface dried, and a third pledget, smeared with the ointment, was then rubbed on the affected surface and surrounding area. This was done every 3 hours, or in severe cases every 2 hours, until improvement occurred. Many cases cleared up within a few hours, becoming free of false membrane on the second or third day. *Thomas.* 364

Dysmenorrhea. TREATMENT. Cocaine applied to tuberculum septi in nose and anterior portion of inferior turbinate on both sides, followed by application of trichloracetic acid over these spots, in 93 cases. Four applications made between periods. Cases with premenstrual headache, nausea, and colic at onset of flow—but without organic pelvic lesions—completely relieved. Of 81 cases sending subsequent reports, 48 had been cured and 14 improved. *Mayer.* 167

Atropine found very useful, except in cases with high blood-pressure, when pressure must be reduced and cause sought and removed. *Stolper.* 235

Eclampsia, Puerperal. TREATMENT. Report of 2 cases in which pituitary extract injections—2 in each patient—yielded successful results, labor being brought on thereby. *Schlossberger.* 28

Eczema. TREATMENT. Both chronic and acute forms respond to thyroid treatment. Fat subjects and those with xerodermia respond best. *Morris.* 11

Edema, Angioneurotic. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Epilepsy. TREATMENT. Four patients with severe essential epilepsy treated with subcutaneous injections of cerebrospinal fluid, taken for each from another epileptic. Considerable benefit. Dose of fluid injected, 3 to 5 c.c. biweekly or weekly. Improvement striking both as to severity and frequency of attacks. In some, petit mal took place of grand mal. Greatest improvement noticed especially if injected fluid was taken from other patients during recurrent attacks, no matter how slight the latter. *Gordon* 235

Epistaxis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin brought early relief in 5 cases. *Citelli.* 279

Erysipelas. TREATMENT. In severe erysipelas a single small vaccine inoculation,—5 million,—preferably of autogenous vaccine, will usually cause a critical fall of temperature, and a second or third dose at about five days' intervals generally completes resolution. *Whitfield.* 56

Discomfort and pain more rapidly relieved by picric acid solution than other agents, and edema disappears promptly. *Wilcox.* 176

Two facial cases treated by local applications of hepatic lipoid, rapid recovery following. *Tilmant.* 416

Series of 148 cases treated with leucocyte extracts. The results obtained were constant and marked, the symptoms in practically all the cases disappearing within a few hours after the first injection, and the rash gradually fading. *Hiss and Dwyer.* 588

Erythema Multiforme. TREATMENT. Use of a colon bacterin may be of value in this condition. *Hazen.* 542

Felon. TREATMENT. Mixture of saturated magnesium sulphate solution and glycerin in equal parts found to control infection in an unusually short time. *Freese.* 304

Where there is as yet no pointing or definite formation of pus, a wet dressing of mercuric iodide, 1 Gm. (15 grains); potas-

sium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), will usually reduce the course of the affection and frequently abort it. *Macfarlan.* Page 554

Fracture, Ununited. TREATMENT. Osmic acid, 0.02 Gm. in 1 per cent. solution, injected directly into focus in a case of ununited fracture of fibia and fibula, rebellious for six months. Injection repeated 3 times in two weeks. Patient discharged two weeks later. Stimulating action of the acid on periosteum and marrow confirmed in rabbit experiments. *Segrè.* 307

Furunculosis. TREATMENT. Where boil already soft: (1) Paint tincture of iodine freely over and around it; if several lesions close together, paint over entire area. (2) Place gauze pad with 10 per cent. ichthyol in petrolatum over the area, cover with a little cotton, and hold with bandage. (3) Next day, remove pus, wipe with benzine, and reapply iodine and ichthyol. (4) When pus entirely absorbed, discontinue iodine, but apply pure ichthyol. (5) To activate epithelial growth where necessary: Argenti nitratis, gr. xv (1 Gm.); balsami peruviani, gr. lxxv (5 Gm.); adipis lanæ hydrosi, ʒiiiss (100 Gm.).—For a furuncle not yet softened: (1) Apply iodine. (2) Thick coating of ichthyol, to be allowed to dry on or covered with a little absorbent cotton and gummed adhesive. (3) Next day, wipe off ichthyol with warm water or if possible wash area with soap and water, and reapply iodine and pure ichthyol. (4) Stop iodine on third or fourth day, continuing ichthyol till all inflammation subsided. Single layer of gauze, tissue, or cigarette paper may be applied when ichthyol has dried. *Berger.* 113

Nuclein, if given in time, will abort boils, styes, acne pustules, acute otitis, coryza, enlarged glands, gingivitis, incipient dental abscess, etc. *Henry.* 678

Gastroenteritis, Infantile. TREATMENT. *B. lactis bulgaricus* in tablet form administered in 55 cases, varying in severity from moderate degrees of infection—6 stools a day—to the most grave—20 or more. From 3 to 10 tablets a day were given to each infant, according to the gravity of the illness. Results: 43 gained in weight; 2 lost; 3 gained and later lost, and 7 showed no change. There were no deaths. The temperature came down to normal within one to three days, and in two or three days the stools became yellowish or brown, well formed, and free from curds, mucus, and blood. *Schwartz.* 364

General Paralysis. TREATMENT. Remissions may be prolonged by suitable doses of tuberculin (1/1000 to 1/5000 mg. of tuberculin residue). *Jackson.* 236

Goiter. TREATMENT. Vaccines prepared from coliform bacilli of patient's own bowel administered in 8 cases of parenchymatous goiter, with disappearance of enlargement in one and diminution in the others. Initial dose usually 125 million, later increased, upon diminution of size of goiter, by 25 or 30 million weekly. Injections given weekly. *Langmead.* 23

Salicylates, creosote carbonate, menthol, thymol, etc., are helpful after the intestinal functions have been regulated. In nodular, cystic, colloid, fibrous, and intrathoracic goiters, iodine is seldom of value and sometimes dangerous. *Sajous.* 1

Goiter, Exophthalmic. TREATMENT. Ligation of thyroid vessels and sometimes a portion of the gland is indicated (1) in patients with mild symptoms of hyperthyroidism; (2) in the large group having acute, severe exophthalmic goiters, and the chronic, very sick patients who, having exhausted all forms of treatment, are suffering from various secondary symptoms, and (3) in cases with marked pulsation and thrill of thyroid arteries associated with cardiac dilatation and loss of weight. Thyroidectomy later advisable, to prevent relapse to former condition. Should trouble recur before a partial thyroidectomy is made, or a severe relapse after partial extirpation, inferior thyroid artery should be ligated and half of remaining lobe removed when improvement occurs. *Mayo.* 16

In early and mild cases in virgins, author begins treatment with corpus luteum, which is useful as antidote to thyroid intoxication. *Berkeley.* 20

Strophanthus administered in exophthalmic goiter with good results. Quinine may be simultaneously used. *Bate.* 513

X-ray exposure of the ovaries carried out in 10 cases of exophthalmic goiter, with favorable results. A gain in body weight followed in 8 cases, the exophthalmos was diminished in 4 and removed in 1, tachycardia was sometimes considerably reduced, and in 9 very marked subjective improvement was noted. Diarrhea ceased in 3 cases after the first exposure. Although no complete cure was effected, the author was led to conclude that, in the usual cases of moderate severity, irradiation of the ovaries yields more certain and rapid effects than the measures customarily employed. *Mannaberg.* 529

Some cases of exophthalmic goiter are of syphilitic origin, and may be cured with antiluetic remedies. For excessive cardiac rapidity in exophthalmic goiter, strophanthus tincture in doses of 5 to 10 minims (0.3 to 0.6 c.c.) three times a day, is most useful; if it fails, belladonna should be tried. Tremor and nervousness are well controlled with ammonium bromide, 20 grains (1.25 Gm.) three times a day; this may be stopped as soon as the strophanthus begins to act. The lukewarm shower bath also allays tremor and nervousness, and promotes sleep. For frequent urination at night, ¼ grain (0.015 Gm.) of codeine should be given at bedtime. Diminution of volume of the thyroid can be obtained by

repeated application of flexible collodion, or by means of zinc, belladonna, or adhesive plaster. The diet should be very simple. Tea and coffee should be absolutely forbidden. The antithyroidin of Möbius, 10 to 30 drops three times a day, gave good results in some of the author's cases. *Abrahams.* Page 644

Hemoptysis. TREATMENT. Subcutaneous injection of 8 minims (0.5 c.c.) of pituitrin nearly always brings relief in average cases. Where first injection fails, give a second, and later if necessary a third, the latter intramuscularly. *Citelli.* 279

Hemorrhage, Gastrointestinal. TREATMENT. Iodine tincture in small doses at short intervals found effective in checking hemorrhage and diarrhea in 6 cases of typhoid fever and in 4 of gastric ulcer. It also relieves abdominal tenderness in the latter condition. *Nottebaum.* 484

Hemorrhage, Post-partum. TREATMENT. Where the uterus has not lost all its tone, hemorrhage can be readily controlled by slow intravenous injection of 0.5 to 1 c.c. (8 to 16 minims) of pituitary extract. *Kreiss.* 665

Herpes Labialis. TREATMENT. Picric acid solution causes rapid drying of lesion and tends to prevent extension. *Wilcox.* 176

Hodgkin's Disease. TREATMENT. Benzene, 5 minims (0.3 c.c.) three times daily at first, then increased to 10 minims (0.6 c.c.), caused marked regression of enlarged nodes, beginning two weeks after treatment begun, in a case previously treated unsuccessfully with X-rays. The 10-minim dose was continued for six weeks. *Lawson and Thomas.* 173

Hyperthyroidism. TREATMENT. Injection into enlarged thyroid of 1 to 4 per cent. solutions of quinine and urea hydrochloride caused marked improvement in 3 cases. *Watson.* 265

Impetigo. TREATMENT. In exceptional cases which do not yield to local measures, a few staphylococcic vaccine inoculations—usually, in fact, a single one—will cause prompt cure. *Whitfield.* 56

Insanity. TREATMENT. Recovery in manic-depressive insanity may be hastened by stimulation of leucocytosis by injection of 1 c.c. of terebene subcutaneously in the flank. *Jackson.* 236

Intertrigo. TREATMENT. Paint picric acid solution on surfaces and separate them with thin layers of absorbent cotton. In the more severely infected cases wet dressings of picric acid. Prompt results. *Wilcox.* 176

Iodine Poisoning. TREATMENT. Calcium lactate internally found useful in 2 cases of iodine poisoning from a course of potassium iodide. *Von den Velden.* 418

Keratitis. TREATMENT. Nuclein has a beneficial action in keratitis, iritis, dacryocystitis and, in less degree, in conjunctivitis and chronic otitis media. *Henry.* 678

Lupus Erythematosus. TREATMENT. Benefit followed use of adrenal substance in this condition. *Morris.* 11

Lupus Vulgaris. TREATMENT. Where Finsen light not available, old tuberculin is capable of great service. Begin cautiously; then make steep rise in dose as soon as one dose ceases to call forth reaction. *Whitfield.* 56

Metrorrhagia. TREATMENT. Among 55 cases of uterine hemorrhage without discoverable local cause, 38 showed signs of hypofunctioning of the thyroid. Thyroid treatment yielded marked benefit in every case. Hemorrhages ceased or became normal, remaining so even after the medication had been discontinued. *Sehrt.* 663

Mammary Abscess. PROPHYLAXIS. Threatened mammary abscess underwent absorption in 2 or 3 cases soon after administration of pituitary extract. *White.* 283

Myasthenia Gravis. TREATMENT. Pituitary extract, combined with ovarian, found useful in 2 cases. *Lagane.* 85

Neuralgia. TREATMENT. Carbon disulphide, applied locally for fifteen seconds, often promptly relieves neuralgias, headaches, and nearly all local pains. *Seelye.* 542

Night-sweats. TREATMENT. Better results are obtained in the night-sweats of tuberculosis with aromatic sulphuric acid than with either agaricin or atropine. *Adams.* 552

Obesity. TREATMENT. Colloidal hydroxide of palladium, suspended in olive oil and liquid paraffin in proportion of 25 mg. of palladium to 1 c.c., caused marked loss of weight, without untoward action except some local irritation, in 2 cases of obesity. Dose, 2 c.c. of suspension, injected under skin of abdomen. *Kauffmann.* 116

Paralysis Agitans. TREATMENT. Good results from administration of thyroid and parathyroid preparations with calcium chloride. *Gauthier.* 86

Perinephric Abscess. DIAGNOSIS. Pain referred to lower limb of same side found of considerable diagnostic value. There are both pain and tenderness, particularly marked along external cutaneous nerve just below anterior superior spine and on external aspect of thigh. *Belikov-Chtomitch.* 117

Peritonitis, Tuberculous. TREATMENT. Operative treatment in 31 cases (27 adults) yielded improvement, usually very marked, in all but 4 cases. An incision 3 to 4 inches long was made through the sheath of the right rectus and the patient eviscerated in so far as possible, the intestines being caught in a nest of hot, moist towels and thoroughly washed with a solution of 50 per

cent. commercial hydrogen dioxide. The abdominal cavity was then thoroughly flushed with the same solution, after which it was washed with equal thoroughness with normal saline solution, as were also the intestines. The latter were then replaced and the wound closed with 3 layers of sutures. Primary union followed in every case. The patient must be got out of bed and about as soon as possible. *Judd.* Page 618

Injections of nitrogen into the peritoneal cavity in a case rebellious to laparotomy, X-rays and inunctions brought about rapid improvement and eventual cure. Four injections were given, of 500, 600, 800, and 600 c.c. respectively. *Brückner.* 619

Pleurisy. TREATMENT. Autoserotherapy recommended in all cases of serofibrinous pleurisy in which pyemic infection is absent. A positive cure may be expected in over 80 per cent. of cases. In large effusions causing severe dyspnea and pain one should aspirate 10 to 200 c.c. of fluid and, before withdrawing the needle entirely, reinject 2 to 3 c.c. under the skin. Immediate relief from symptoms and a more rapid absorption of the exudate will follow. The injections should be repeated every other day until decided improvement takes place. *Pfender.* 417

Pneumonia. TREATMENT. Ethyl hydrocupreine hydrochloride given internally in pneumococcic lung inflammation, with good results. Dose usually 0.5 Gm. (7½ grains) *t. i. d.,* daily amount not exceeding 1.5 Gm. (23 grains). In 9 cases no other medication was employed: in all of these temperature fell more rapidly, by crisis or lysis, than with other methods. No untoward after-effects. *Vetlesen.* 118

Epinephrin, 8 minims (0.5 c.c.) of 1:1000 solution in 1 pint (500 c.c.) of saline solution subcutaneously, caused prompt improvement in a desperate case. *Lonhard.* 281

Poliomyelitis, Acute. DIAGNOSIS. Preparalytic symptom: A peculiar, twitching, tremulous, or convulsive movement of certain groups of muscles, lasting from a few seconds to somewhat less than a minute. Usually affects part or whole of one or more limbs, face, or jaw, but sometimes whole body. Duration of spells short at first. Often accompanied by a cry similar to hydrocephalic, or by brief period of unconsciousness. *Colliver.* 177

Pruritus Vulvæ. TREATMENT. In 2 cases of this condition associated with the menopause the itching was with great promptness relieved by internal administration of an extract of the corpora lutea of pregnant cows. *Dannreuther.* 520

Psoriasis. TREATMENT. Thyroid preparations found especially efficacious in psoriasis associated with adiposity. They should not be exhibited until eruption is fully developed. *Morris.* 11

Puerperal Fever. PROPHYLAXIS. Whenever irrigation of vagina with boiled water through speculum yields a yellowish fluid, one should irrigate once daily for at least ten days with a 1:200 solution of lactic acid. Morbidity thereby reduced from 28.6 to 7.6 per cent. Full baths to be avoided before delivery. *Zweifel.* 54

TREATMENT. Intravenous injections of distilled water given in 142 cases of puerperal fever. Of 62 patients with pyemia and septicemia, 42 were cured. In an hour or hour and a half after an injection there is usually a chill, with rise in temperature. By evening or the following morning temperature will have fallen to normal, sweating usually accompanying the drop. *Ilkewitsch.* 53

Pyloric Spasm. TREATMENT. Atropine in a certain proportion of cases brings relief. The author found that epinephrin hypodermically procures complete and lasting relief in most instances. In 2 cases the palpable pyloric tumor could be felt to melt away under its influence. Prolonged gastric lavage, using water at 105° F., also has a happy effect in relieving spasmodic stomach conditions. *Stockton.* 367

Rachitis. TREATMENT. Pituitary extract given to 16 young children with rickets, and effects compared with controls. After a few weeks of pituitary, the children were able to stand and began to walk; fontanelles began to close and growth of teeth was considerably accelerated. Osseous tenderness gradually diminished, weight was gained, and musculature became firmer. *Weiss.* 218

Retention of Urine, Postoperative. TREATMENT. Pituitary extract injected intramuscularly in 21 puerperal and 24 postoperative cases with excellent results. *Ebeler.* 91

Rheumatism, Acute. TREATMENT. Intravenous use of sodium salicylate resorted to in 12 cases, 130 injections in arm veins being given in all. A very fine, sharp needle should be used. The solution is made by dissolving 10 Gm. of C. P. crystalline sodium salicylate in 50 c.c. of distilled water freshly sterilized by boiling. Each cubic centimeter contains 3 grains (0.2 Gm.) of the salicylate. Usually the dose was 15 or 20 grains (1 or 1.25 Gm.) and injections were given at twelve- or eight- hour intervals over a period of three to six days. Occasionally, in robust men, 30 grains (2 Gm.) were given, and as much as 120 grains (8 Gm.) in the first twenty-four hours, without unpleasant effects. Relief of pain was prompter and more pronounced than from oral administration. The method is indicated in patients unable to retain the drug by mouth; those who show little or no response to the usual method; to start the treatment with a few intravenous injections where pain is intense, and in cases with threatening heart complications, or in severe rheumatic affections of the eye. *Conner.* 428

Intrarectal administration of sodium salicylate recommended in refractory cases of acute and subacute rheumatism. The salicylate enema is given immediately after a cleansing soapsuds enema, and is administered with a Davidson syringe and a rectal tube inserted 6 to 8 inches. First dose in men is usually 8 to 10 Gm. (2 to 2½ drams), in women 6 Gm. (1½ drams), incorporated in 120 to 180 c.c. (4 to 6 ounces) of plain or starch water, with 1 to 1.5 c.c. (16 to 24 minims) of opium tincture. The dose may be repeated within twelve hours, but usually a daily enema suffices, with doses increasing from 30 to 50 per cent. daily until the limit of tolerance is reached. *Heyn.* Page 682

Ringworm. TREATMENT. Body ringworm more easily controlled by painting on picric acid solution than by usual antiseptic ointment. *Wilcox.* 176

Wash part with a strong solution of sodium bicarbonate, swab with a mixture of 1 part of ether to 2 parts of alcohol, dry, paint with a 2.5 per cent. tincture of iodine, and apply immediately an ethyl chloride spray until the skin gets china white. In twenty-four to forty-eight hours the patch of ringworm will have become quiescent. Next tiny spots should be looked for and similarly treated. In ringworm of the scalp 3 or 4 applications of iodine and spray are required, but on the face or smooth surfaces 1 application suffices. *Foley.* 429

Sciatica. TREATMENT. Eight cases treated by injections of 4 per cent. quinine and urea hydrochloride in salt solution into subcutaneous tissue over course of nerve. Fifty injections in all, without untoward results. Always decided relief after first injection and no further attack after third. Injections daily for 4 doses, then every other day until patient entirely relieved. Two cases of facial neuralgia also treated, with complete relief after second injection. *Cables.* 119

Septic Processes. TREATMENT. Sodium bicarbonate, 10 to 20 Gm. (150 to 300 grains) in a bottle of seltzer water, taken every day, recommended in these conditions. Cases of osteomyelitis, scarlatinal nephritis with abscess, etc., all recovered. The alkali can also be given by proctoclysis, or intravenously. *Vorschütz.* 682

Sinusitis. TREATMENT. Vaccine treatment found of great value in acute cases slow in healing and becoming chronic. In all chronic conditions showing a tendency to be of the latent type it should be routinely used; likewise, after radical operations. It offers the most hope in old operated cases which have not been entirely cured or have become reinfected. *Skillern.* 673

Syphilis. DIAGNOSIS. Luetin test valuable as diagnostic measure in tertiary and latent stages of syphilis, indicating a state of hypersensitiveness to spirochetal proteins induced by a period of cessation of introduction of these proteins previous to the test. Provocative injection of salvarsan, followed by both Wassermann and luetin tests, suggested to ascertain whether treatment has been curative in a given case. *Foster.* 179

TREATMENT. Epinephrin, 15 to 20 drops of 1:1000 solution in a little water by mouth, advised ten to fifteen minutes before injection of neosalvarsan, to prevent "nitritoid" symptoms, arising in some patients from the latter, *e.g.,* facial congestion, tingling in throat, nausea, and vomiting. *Galliot.* 212

Tuberculosis. TREATMENT. Garlic, 1 fluidram (4 c.c.) of the expressed juice or 2 drops of the essential oil three times a day, recommended in all forms of tuberculosis. Externally, poultices of crushed garlic bulbs, 1 part, with 3 parts of lard, or garlic ointment (50 per cent. of the juice in petrolatum) are to be applied. 431

Tuberculosis, Laryngeal. TREATMENT. Scarlet red, 10 per cent. in a mixture of equal parts of sesame oil and petrolatum, applied twice daily in cases with laryngeal lesions, whether ulcerative or not. No unpleasant results. Prompt relief of pain in every case, tendency of ulcerations to heal, hoarseness improved, and, where only infiltrations and edema, swelling markedly less after a few weeks. *Hinman.* 306

Tuberculosis, Pulmonary. DIAGNOSIS. Contrast between resonance of air-containing tissue and deadness of the airless spot is striking when light percussion practised. If on increasing force of stroke dullness remains, one may conclude that there is an extensive area of airless tissue. A shorter apex on one side is of immense significance. In infiltrated apex a long, held inspiration gives a duller note on percussion than is found over healthy side; this is often of value in doubtful cases. Where history, symptomatology, and course of disease point to tuberculous infection, one may safely diagnosticate tuberculosis without any definite auscultatory signs. *Fishberg.* 54

Typhoid Fever. TREATMENT. Venesection found to yield marked benefit in a case of typhoid fever with severe infection in toxemia. Removal of 6 to 14 ounces cannot do harm and may be productive of much good in such cases. *Rudolph.* 494

Use of repeated doses of only 3 or 5 million organisms urged. The results appear to be as satisfactory as from larger doses. The culture used in 10 cases was ordinary prophylactic stock vaccine, diluted with freshly boiled water. *Kahn.* 619

Liquid paraffin recommended in typhoid cases with constipation. Dosage, ½ ounce (15 Gm.) at night and, if this be insufficient, in the morning as well. It is best taken floated on soda water. With such dosage enemata are often unnecessary. No untoward effects. *Phillips.* 680

Ulcer, Gastric. DIAGNOSIS. Following combinations practically assure a diagnosis of ulcer: (1) Tender point with occult blood. (2) Hypersecretion with tender point. (3) Hypersecretion with occult blood. (4) Tender point with repeated positive thread tests. (5) Tender point with hematemesis. (6) Hematemesis with hypersecretion. (7) Hypersecretion with positive thread tests. *Verbrycke.* Page 114

Ulcers. TREATMENT. In indolent tuberculous ulcers, 1 or 2 doses of old tuberculin usually cause complete healing in a week or two. *Whitfield.* 56

In old leg ulcers and infected wounds a dressing of mercuric iodide, 1 Gm. (15 grains); potassium iodide, 4 Gm. (1 dram), and water, 100 c.c. (3⅓ ounces), is of value. *Macfarlan.* 554

Urticaria. TREATMENT. Pituitary and adrenal preparations found useful. *Morris.* 11

Vomiting. TREATMENT. In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value. *Berkeley.* 20

Carbon disulphide, applied for fifteen seconds over the epigastrium, will produce the same effect as counterirritation with a strong mustard plaster for half an hour. *Seelye.* 542

Vomiting of Pregnancy. TREATMENT. Apomorphine, 1/36 grain (0.0018 Gm.) in a teaspoonful of water, found effectual in a severe case; likewise in other cases of vomiting or nausea. *Field.* 182

Brilliant results obtained in some cases by administration of thyroid preparations. *Walker.* 409

Vomiting, Postanesthetic. TREATMENT. When vomitus of hemorrhagic type, give 5 to 10 minims (0.3 to 0.6 c.c.) of 1:1000 epinephrin hydrochloride in a teaspoonful of water. Cessation of vomiting follows. *Keay.* 93

Whooping-cough. TREATMENT. Vaccine containing 20,000,000 dead *B. pertussis* per c.c. used in about 70 cases. Infants received ⅓ c.c. as initial dose and ⅔ c.c. four days later; others, ½ c.c. and 1 c.c. Prompt, uniformly good and often striking results obtained. In cases already having a bronchopneumonia as complication, a mixed vaccine should be used. *Davidson.* 118

Epinephrin, 3 minims (0.2 c.c.) of 1:1000 solution, given every four hours in case in a child 7 years old, ill six weeks. Paroxysms markedly reduced almost at once. Drug then continued 3 times a day for three weeks more. *Lord.* 280

Wounds. TREATMENT. Stream of air from ordinary electric fan or register found useful in drying and promoting healing in large wounds, obstinate leg ulcers, and discharging eczema. *Heisler.* 182

Mixture of saturated magnesium sulphate solution and glycerin in equal parts recommended for dressing infected wounds. *Freese.* 304

Book Reviews

THE FOUNDATIONS OF NORMAL AND ABNORMAL PSYCHOLOGY. By Boris Sidis, A.M., M.D., Boston: Richard G. Badger. Toronto: The Copp Clark Company, Limited, 1914.

Psychology, like every other science, has points of contact with that department of biology called medicine. Some relationships being closer than others, it is a nice point to determine how much of the elements of each of each shall enter into the education of the proponents of medicine.

Since the processes of the human mind bear so directly on those of the body, in and out of health, it is obviously essential that conservators of health be made aware of the leading principles of psychology, especially the physiologic and the pathologic. Some familiarity with works on psychology tends to the opinion that only those written by physicians who have been in active practice are useful as clinical guides. Other writers subordinate the physiologic and magnify the philosophic, or the metaphysical realm, into which it is perilous for clinicians to enter.

The popular tendency (shared by medical men of eminence, and due to ignorance of psychologic subjects) is to regard psychology as something mystical; as founded on peculiar beliefs, religious adherences, on faith or mind cures, on the more shady sides of spiritualistic manifestations—telepathy, telesthesia, etc. Confusion is rendered more confounding by demands for "practical results," in law, industries, the reformation of social disorders, and the like. Hence the "Foundations of Normal and Abnormal Psychology" are prerequisites to a working knowledge of clinical studies, psychopathologic and psychotherapeutic. Thus inquiries into the nature of psychology and into the nature of mental processes, the purposes, the chance aspects of life and mind, the subconscious, theories of perception and of reserve energy, are of the utmost consequence to clinical psychology.

The second half of the volume presents the very foundation, biologic and psychologic, of all studies in the domain of normal and abnormal types of mental activities.

The author would keep psychology separate from those practical problems to the solution of which it is now being erroneously applied. He repudiates "business psychology" as well as all primary school and anthropologic tests of mentality for the reason that he believes there is no such thing as business psychology and because all school and court tests are puerile, untrustworthy, and harmful to the community which relies on them. Hence, while he will have none of them, he lays great stress on clinical studies which form the basis of abnormal psychology. In the preface he points out: "We can obtain some help from abnormal psychology in the application of remedial measures to the treatment of nervous and mental maladies—as abnormal psychology is based essentially on clinical and experimental data of mental diseases." He is, in fact, now finishing two books devoted entirely to a detailed exposition of clinical facts. In Chapter VII he insists that abnormal psychology, based on clinical studies, comes before normal psychology. In expressing his disapproval of criminal, school, and vocational psychology, the author states his belief that we deal therein with social and economic problems which should be treated from widely different standpoints and methods, because we should no more expect psychology to afford the solution than to expect physics or chemistry to lead to practical results in normal conduct. It is highly misleading and detrimental to psychology to put forth claims which are essentially false. Dr. Sidis is first and last a clinician. At his psychopathic institute (as the reviewer has seen) he handles with rare skill and patience those whose mental confusion needs critical, kindly domination and supervision, so essential to cure. The second part of the volume deals with Dr. Sidis's theory of "moment consciousness" and the nature and development of consciousness from reflex to compound reflex and instinctive consciousness, reaching the highest form of consciousness, that of self-consciousness.—J. M. T.

Symptomatology, Psychognosis, and Diagnosis of Psychopathic Diseases. By Boris Sidis, A.M., Ph.D., M.D., Medical Director of the Sidis Psychotherapeutic Institute, Boston: Richard G. Badger, 1914.

This is an eminently practical book dealing with states of abnormal mental life, disorders, as well as personal experiences experimental and clinical. The medical profession urgently needs to realize not only the importance but necessity of a working knowledge of subconscious mental affections. Until this is attained they must make daily blunders in clinical work. It is safe to say that more than half of all who consult them show evidences of psychopathic disorders. The treatment of this phase of suffering should be applied with the same skill and certitude given to somatic derangements. This branch of the healing art is no more the sole domain of neurologists than is treatment of deformities following paralysis, which are pre-empted by orthopedists.

A crooked mind is just as much the province of the general practitioner as is the crooked limb. Both should be treated in their incipiency to get the best results. The essential duty of the conservator of health is to become aware of the nature, causes, and remediability of all commonly recurring ailments, or their effects. Among these, mental disorders are just as significant as physical.

The art of medicine demands of its proponents sufficient vision to foretell and forestall disabling effects which readily become incurable if neglected. There is no escaping from this responsibility. It is true, writers on the psychopathies too rarely present the subject in a plain or attractive form; hence it appears difficult, mysterious, and practitioners omit to learn the few leading principles needful. No one is better fitted to elucidate this subject for the rank and file medical man than is Dr. Sidis, who speaks from the standpoint both of an experienced research scholar and clinician. He lays special stress on the fact that:—

"The phenomena of abnormal mental life do not present any purpose in the present; they are repetitions, recurrences of a past, but they have no aim, no purpose, no meaning in the present life existence of the patient. In fact, the symptoms are pathological, just because they have no purpose, no meaning in the life of the patient."

This lack of meaning is characteristic of psychopathic affections,—is the key to a right comprehension of the underlying causes and other facts as well as of management, viz., psychotherapy. On this subject he says:—

"It is best to live with the patient, to watch him closely when he acts spontaneously, converse with him, discuss with him, work with him, be with the patient day and night, and labor with him for hours, as well as live with him intimately for weeks and months. It is only under such conditions that we come to realize the actual conditions of the patient and can obtain a glimpse of the workings of his mind."

This, of course, applies to those severe cases requiring institutional care. All through the book will be found plain descriptions of phenomena and their explanation from which any one can learn to deal with psychopathies of various kinds and degrees.

The book is divided into three parts: Part I. Subconscious States, Borderland Phenomena: Hypnoidal twilight states; primitive rest states; psychognosis; hypnoid states; hypnolepsy, etc. Part II. Psychopathic Diseases: Classifications of nervous and mental diseases; sensory, motor, visceral and circulatory; illusions; hallucinations; dissociation; dreams; double thinking; aphasias; delusions; amnesia, etc. Part III. Psychognosis and Diagnosis: Recurrent mental states; traits and thresholds of dissociated systems; psychognosis by hypnosis; by hypnoidal states; somopsychosis and psychoneurosis; the diagnosis of psychopathic states. Appendix: Scheme of examination; hypnoidal states of Sidis, etc. Every page is full of interesting observation and helpful recommendations. The book is to be highly commended to all clinicians.—J. M. T.

A Doctor's Viewpoint. By John Bessner Huber, A.M., M.D. Pp. 175. New York: Gazette Publishing Company, 1914.

In this little book will be found a series of brilliant essays on many of life's problems, well worth careful perusal both by physicians and, especially, intelligent laymen. It is a notable contribution to good literature by a liberally educated, intellectual, man who enjoys the special privilege of medical training and experience. We need such books to recommend to our clients. They will go far toward raising the respect, the potential, of our profession in the eyes of those who may be inclined to look upon us as a group to be called upon only in emergencies. Such thoughts and opinions will serve to demonstrate the breadth and depth of self-abnegation, of humanitarianism, of earnest effort to influence mankind for good which our profession is perpetually striving to achieve.—J. M. T.

A Textbook of Medical Diagnosis. By James M. Anders, M.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College of Philadelphia, and L. Napoleon Boston, M.D., Professor of Physical Diagnosis, Medico-Chirurgical College of Philadelphia. Second Edition, Thoroughly Revised. Octavo of 1248 Pages, with 500 Illustrations, Some in Colors. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $6.00, net; Half-morocco, $7.50, net.

The new edition of this very complete and useful work gives evidence of a broad and careful revision at the hands of its authors, in spite of the shortness of the period—three years—which had elapsed since the appearance of the first edition. Among the more important additions may be mentioned references to movements of the two halves of the chest; electrocardiograms; extrasystole; auricular fibrillation; sinus irregularity; succussion sounds audible over the abdomen; abdominal tension with original methods of determination; albuminous sputum; cobra venom reaction in syphilis; the tick in the transmission of relapsing fever; the Rumpell-Leed phenomenon in scarlet fever; inclusion bodies in scarlet fever; sweating and its significance; Trichinella spiralis in the blood; Macewen's sign and Brudzinski's sign of epidemic meningitis; Prendergast's reaction for typhoid fever, etc. Clinical tables have been added on such subjects as bloody sputum; dyspnea; hemorrhage from the mouth; abdominal enlargement; vomiting, ascites, etc. The subjects of Stokes-Adams disease, Addison's disease, anterior poliomyelitis, duodenal ulcer, and blood-pressure have been rewritten. With its clear, terse text, convenient arrangement, and practically helpful illustrations, this book will undoubtedly maintain the popularity in the profession it has already deservedly enjoyed.

Technik der speziellen Klinischen Untersuchungsmethoden. By Prof. Dr. Theodor Brugsch, I. Assistant der II. medizinischen Universitätsklinik in Berlin, and Prof. Dr. Alfred Schittenhelm, Direktor der medizinischen Universitätsklinik in Königsberg. Part I, Octavo of 522 Pages, with 359 Text Illustrations. Part II, Octavo, Pp. 523 to 1078, with 115 Text Illustrations, 1 Colored Plate, and 1 Table. Berlin and Vienna: Urban and Schwarzenberg. New York: Rebman Company, 1914. Cloth, Parts I and II, 40 marks ($10.00); Paper Bound, 36 marks $(9.00).

Part I of this extensive work on special clinical methods of examination is devoted to the blood, electrocardiography, the graphic registration of the circulatory functions pneumography, röntgenology, bacteriologic diagnosis, immunodiagnosis, the principal technical procedures of pathologic histology, and optic methods of examination. The field covered naturally exceeds that of the ordinary clinical laboratory, encroaching largely on the special research procedures of physiology, physiologic chemistry, physics, etc.; but the intention has been to place the technical material in such a form that it can readily be applied, where the occasion presents, to actual clinical work. In the first section, that on the blood, methods are described for estimating the total volume of the blood, the total hemoglobin and its oxygen-carrying power, the oxygen content in arterial blood, the gas content of the blood in the right heart, and the gaseous interchanges in respiration. Various collaborators have assisted the authors in writing certain parts of the work, or were

themselves exclusively entrusted with the task of writing on subjects with which they are especially familiar. These collaborators are J. Brahm, W. Frey, F. Janus, F. Meyer-Betz, F. Müller, G. Nicoli, J. Plesch, H. Schade, J. Schmid, T. Stumpf, W. Weichardt, and G. Wiedermann.

Part II, which concludes the work, contains sections on the study of metabolism, special methods of chemical research, the investigation of ferment action, Abderhalden's reaction, investigation of the functional condition of the vegetative nervous system, the technique of the procedures in physico-chemical research that are of most importance from the standpoint of medicine, and anthropometry. The numerous illustrations facilitate understanding of the procedures described. It will readily be seen that this work is destined to be of inestimable value to research workers.

Serology of Nervous and Mental Diseases. By D. M. Kaplan, M.D., Director of the Clinical and Research Laboratories of the Neurological Institute, New York City. Octavo of 346 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.50, net.

No book has heretofore been published dealing exclusively with serum diagnosis and treatment in nervous and mental diseases. The extent of the subject will be realized when it is mentioned that Dr. Kaplan's collated data from the scattered articles that have already appeared in general and special periodicals cover 263 pages. The field covered includes the technique of lumbar puncture, the physical and chemical properties and cytology of the spinal fluid, the Wassermann reaction, the serology of meningeal affections, nerve affections, spasmophilic states, disorders of internal secretion, psychoses, etc. Part III is devoted entirely to the serology of nervous and mental diseases of luetic origin. The distribution and detection of the *Treponema pallidum* is, among other subjects, discussed; also, the gold chloride reaction in general paresis, the serologic differentiation between cerebrospinal lues and general paresis, and the influence of treatment on serologic conditions. Part IV is devoted to the therapeutic use of salvarsan, the manner of administration, behavior in the system, and possible untoward manifestations being taken up in detail. The remainder of the book contains a complete summary of the literature of the subject, covering 70 pages, and an index. The illustrations include photographs of the actual procedures to be gone through in the performance of diagnostic tests. This work cannot fail to prove very useful where up-to-date laboratory procedures in neurologic and psychiatric practice are to be availed of.

A Manual of Disease of the Nose and Throat. By Cornelius G. Coakley, M.D., Clinical Professor of Laryngology in the College of Physicians and Surgeons, Columbia University, New York. Fifth Edition. Duodecimo of 615 Pages, with 139 Engravings and 7 Colored Plates. Philadelphia and New York: Lea and Febiger, 1914. Cloth, $2.75, net.

In the fifth edition of this work, which has attained a high degree of popularity among both practitioners and students, such changes and additions in the sections on diagnosis and treatment have been made as have proven practical in the author's personal experience. Special attention is, as before, given to the sections on methods of examination of the patient, and sufficient guidance is given for conducting appropriate microscopic and bacteriologic investigations where the nature of the morbid process existing in an individual case is in doubt. In the sections on treatment full details are given, for the benefit of those who have not had the advantage of personal clinical instruction. A special chapter on therapeutics, in which drugs are classified according to their local actions and a number of prescriptions given, with indications for their employment, has been added. References to these additional remedies are indicated in heavy type in the index. The work contains several new plates, and in general, will be found even more useful than in its previous editions.

Die Krankheiten der Nase und Mundhöhle, sowie des Rachens und des Kehlkopfes. By Dr. Alfred Bruck, Berlin. Second Edition, Greatly Enlarged and Improved. Octavo of 472 Pages, with 252 Text Illustrations, some in Colors, and 2 Plates. Berlin and Vienna: Urban & Schwarzenberg. New York: Rebman Company, 1912. Paper Bound, 14 marks ($3.50).

In this textbook are combined the subjects of rhinology, stomatology, and diseases of the pharynx, larynx, and lower respiratory passages. The author's aim throughout has been to help the practising physician, diagnosis and treatment receiving ample discussion, somewhat at the expense of etiological and pathologic considerations. Anatomical and physiological facts are necessarily treated in full, as these specialties demand a thorough understanding of the parts, if success in diagnosis and treatment is to be attained. In the

present, second, edition, various chapters, especially those on affections of the accessory sinuses, direct methods of examination, tuberculous laryngitis, and disturbances of the voice, have been entirely recast. Much new material has also appropriately been introduced in the sections on X-ray examination, septal resection, Killian's operation, emphysema of the parotid, etc. Many new illustrations have also been added. Most of the illustrations deal with apparatus and actual dignostic or therapeutic procedures. The text is clear, concise, and well divided with headings in bold type, thus facilitating reference. Great pains have manifestly been taken to exclude relatively useless material, only facts and methods of practical importance being introduced. The practitioner cannot fail to find satisfaction in this work.

A Treatise on Clinical Medicine. By William Hanna Thomson, M.D., LL.D., Formerly Professor of Practice of Medicine and of Diseases of the Nervous System in the New York University Medical College; Ex-President of the New York Academy of Medicine, etc. Octavo of 667 Pages. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.00; Half-morocco, $6.50.

The author's avowed aim in presenting this book is "to serve the physician while he is actively engaged in the performance of his professional duties." In the opening chapter the assertion is made that outside of hot moist climates, the commonest cause of disease and death is "catching cold." To the pathogenesis and treatment of the latter is devoted the entire first chapter. The general significance of such symptoms as pain, cough, dyspnea, edema, and vomiting is then discussed, and after this the general use of remedies, medicinal and non-medicinal. Part II is devoted to the infectious diseases and Part III, occupying about two-thirds of the book, to diseases of special tissues or organs. Except in its opening chapters the work does not show many features distinguishing it from numerous textbooks of medicine already on the market. The classification of the infections into those directly communicable, those communicable by intermediate carriers, and those communicable by inoculation is, however, new and rational. Although the work will be found to contain a number of useful practical hints, deficiencies are apparent in some directions, as, *e.g.*, under diabetes mellitus, where but five lines are devoted to dietetic treatment, though over two pages on medicinal treatment. Under obesity the doses of thyroid extract recommended are excessive, especially if an American preparation, 1 grain of which is equivalent of 5 grains of fresh thyroid, be used. No mention is made of rabies prophylaxis. The work is, however, readable and in many respects useful.

Die experimentelle Pharmakologie als Grundlage der Arzneibehandlung. By Dr. Hans H. Meyer, Wien, and Dr. R. Gottlieb, Heidelberg, Professoren der Pharmakologie. Third Edition. Octavo of xx + 595 Pages, with 66 Text Illustrations, Partly in Colors, and 1 Colored Plate. Berlin and Vienna: Urban & Schwarzenberg. New York: Rebman Company, 1914. Paper Bound, 15 marks ($3.75).

Three years have elapsed since the appearance of the second edition of this excellent textbook. The arrangement of the work in the present, third, edition is the same as hitherto, the text having been augmented, however, by the addition of about 40 pages of new material. No large new section has been introduced, the additions being made here and there in small paragraphs or sentences to record the researches made or new conclusions reached in the last three years. The book was reviewed in these columns at the time the second edition appeared, and perusal of the new issue leaves the same very favorable impression upon the reviewer as was previously received. All important researches in pharmacology are taken into account in the author's exposition of the subject, and the facts presented are discussed with ideal clearness and succinctness.

The Philosophy of Radioactivity. By Eugene Coleman Savidge, M.D., Member of the New York Academy of Medicine, New York Obstetrical Society, etc. Octavo of 151 Pages. New York: William R. Jenkins Company, 1914. Cloth, $1.50, net.

Radioactivity, according to the author of this book, is "the ebb of the force which vitalizes the universe." Astronomers are yet relucant to accept the logic of radioactivity, for it alters their "square of the distance" in computing planet temperatures. Chemistry, however, has promptly reconstructed its atom. Geology, forgetting its old strife with physics, now figures the age of the earth in new terms, So it has been in physics and biology. Indeed, even the equilibriums and subcomponents of history and sociology seem to follow the relentless mathematics of the new philosophy; and these, themselves, unfold a tale more absorbing than fiction, with man as "exponent of the whole."

Dr. Savidge's thesis is that matter is involuted with selective purpose, and that there is an "attraction of duration for matter" as mathematical as the attraction of gravitation. Identities in living beings are as surely selected as that an acid seeks its base. Along with possible tendencies, or "instincts" in matter, run radioactive influences which seem to set the hereditary type, if they do not, indeed, determine sex itself.

L'Infection Puerpérale. By Prof. Constantin Daniel, of Bucharest. Pp. 123. Paris: A. Maloine, 1914.

In this monograph the author discusses the bedside and laboratory diagnosis, as well as the rational treatment, preventive and curative, of puerperal infection, in the light of the most recent views of and methods related to this disorder. In the section on diagnosis there are taken up in succession initial phases of the infection; the general reaction to the infection; the local reactions, near and remote; the venous complications; data as to the condition of the blood—bacteriemia, toxinemia, sapremia,—and the diagnosis of the origin of the infection, including the question of its exogenous or endogenous cause. In the part devoted to treatment, local prophylaxis is first thoroughly discussed, reference being made among other topics, to serum and vaccine protective therapy, leucoprophylaxis, colloidal metalotherapy, and general hygiene. The curative treatment as given includes intrauterine, surgical, and general therapeutics. The protean nature of puerperal sepsis is emphasized by the author, who also points out that it is analogous to post-operative infection and, being the result nearly always of some deficiency in obstetric technique, should prove almost entirely eliminable through the improved methods of dealing with parturients. The work bears evidence of a broad scrutiny of the literature, 149 authors being quoted, and may be recommended without reserve as a presentation of the most recent views on the subjects of which it treats.

The Backward Baby. A Treatise on Idiocy and the Allied Mental Deficiencies in Infancy and Early Childhood. By Herman B. Sheffield, M.D., Fellow of the New York Academy of Medicine, Formerly Instructor in Diseases of Children in the New York Post-Graduate Medical School and Hospital, etc. Pp. 184, with 22 Original Illustrations. New York: Rebman Company, 1915. Cloth, $1.00.

For this essay the author was awarded the Alvarenga Prize of the College of Physicians of Philadelphia, on July 14, 1914. As existing monographs and textbooks are almost exlusively devoted to the study of feeblemindedness in children of school age and adults, it seems to the author opportune to present to the profession a survey of the etiology, pathology, diagnosis, and treatment of mental deficiencies in children under 5 years of age, in order that the physician may be prepared to ameliorate, or possibly cure, such conditions before permanent destruction of the cerebral functions has been produced. Much of the work is based on the author's own observations. In the first chapter he discusses heredity and the causes of early mental deficiency, including syphilis, alcoholism, consanguinity, uterine disease, traumatism, etc. Chapter II defines normal intelligence and sets forth tests for diagnosticating mental deficiencies in early childhood. In Chapter III the author establishes symptomatic distinctions between the various forms of amentia: Microcephalus, hydrocephalus, paralytic amentia, amaurotic family idiocy, mongolism, cretinism, etc. Chapter IV deals with prophylaxis and the fifth and last chapter with treatment, including general hygiene, organotherapy, and surgical and other procedures. The book well deserves a careful reading, as the possibilities of good from appropriate treatment in the conditions with which it deals are in many instances by no means inconsiderable, and the author's presentation is original and practical.

Innere Sekretion. Ihre Physiologischen Grundlagen und ihre Bedeutung für die Pathologie. By Prof. Dr. Artur Biedl, Vienna. With an Introduction by Hofrat Prof. Dr. R. Paltauf, Vienna. Second Edition. Vol. II. Octavo of 693 Pages, with 56 Text Illustrations and 13 Colored Illustrations upon 6 Plates. Berlin and Vienna: Urban & Schwarzenberg, 1913. Paper Bound, 24 marks ($6.00).

The second edition of Prof. Biedl's work is in two volumes, whereas the original edition comprised but one. The second volume now issued contains the concluding portion of the section on the adrenals, and the sections on the carotid body, hypophysis, pineal, testes, pancreatic internal secretion, gastric and intestinal hormone, and renal internal secretion. The remainder of the volume, constituting nearly one-half its total bulk, is occupied by an extensive bibliography of the subject of internal secretions, the various author's names being listed in it in alphabetical order, with their writings below. This covers the subject up to the end of the year 1911, and in spite of the 250 pages it occupies, is not claimed by the author to be a complete reference list, especially in the case of the earlier literature. The author's text is chiefly a compilation of experimental and other labors performed by various observers in the line of the internal secretions, and as such is a most excellent and valuable piece of work. Apparently no especial attempt has been made to correlate the numerous known facts presented. In spite of the monumental array of available material, one is unable to gather from the author's work any definite idea of the functions of most of the internally secreting organs with which the book is concerned. Doubtless the experimental work so far done has not been of such character as render at all easy the reaching of absolute conclusions concerning these functions. Nevertheless the author is to be congratulated upon his successful rendering of the aggregate of facts now in hand.

On Dreams. By Prof. Dr. Sigmund Freud. Authorized Translation by M. D. Eder, from the Second German Edition. With an Introduction by W. Leslie Mackenzie, M.A., M.D., LL.D. Pp. xxxii + 110. New York: Rebman Company, 1914. Cloth, $1.00.

At the end of many years of research among all classes of mental diseases, Freud has become convinced that "the interpretation of dreams is the royal road to a knowledge of the part the unconscious plays in the mental life." The small volume now translated is but an introduction to the large field opened up by Freud and his colleagues, and includes a discussion of such subjects as dream analysis, manifest and latent content of dreams; the dream mechanism; displacement; transvaluation of psychical value; the ego in the dream; regard for intelligibility; repression; classes of dreams, dream symbolism, etc. Those who have gained information concerning Freud's views merely at second hand will welcome this translation of his own fundamental exposition of the subject.

Diseases of the Labyrinth. By Dr. Erich Ruttin, Privatdocent in the Otological Clinic, University of Vienna. Authorized Translation by Horace Newhart, A.B., M.D., Instructor in Otology, University of Minnesota; Otologist and Rhinologist Northwestern Hospital, etc. Crown Octavo of 232 Pages, with 25 Illustrations. New York: Rebman Company, 1914. Cloth, $2.00, net.

This is a translation of Dr. Ruttin's "Klinik der serösen und eitrigen Labyrinthentzündungen," made in response to a persistent demand on the part of many American and English students of otology who have followed the author in his Vienna clinic. Both otologists and general practitioners who are not familiar with recent progress in the diagnosis and treatment of labyrinthine complications will find it a practical treatise upon the subject, which should prove a useful guide in dealing intelligently with cases of labyrinthine involvement, constantly appearing in practice, yet until very recently often unrecognized. The book is introduced by Prof. Dr. Victor Urbantschitsch, whose assistant Dr. Ruttin has been for a number of years. The translation is good, though literal.

Compendium der Arzneimittellehre. By Dr. J. Lipowski, Chefarzt der inneren Abteilung der städtischen Diakonissenanstalt in Bromberg. Pp. 256. Berlin and Vienna: Urban & Schwarzenberg. New York: Rebman Company, 1914. Cloth 5 marks ($1.25).

In this small work the author seeks to pick out for the practitioner, among the innumerable drugs introduced in recent years, those which experience has proven worthy of employment. The older drugs still in common use are, of course, also mentioned, and in fact, used as basis for explanation of the actions of the newer remedies. The structural formulæ of various drugs more or less complex chemically are transferred from the general text to a special chemical appendix at the end of the volume. The various remedies discussed are classified in groups according to their clinical uses. Thus, the first chapter is devoted to the narcotics, hypnotics, and sedatives, the second to local anesthetics, the third to stimulants, and the succeeding ones, respectively, to heart tonics, diuretics, urinary antiseptics, gout remedies, remedies used to produce various effects on the alimentary tract, remedies acting on the respiratory organs, creosote and guaiacol as antiphthisics, antipyretics, antiseptics and disinfectants, sulphur compounds, phosphorus compounds, iron, remedies acting on the blood-vessels, organ preparations, curative sera, and nutrient substances. Many unofficial remedies are discussed, but only such as have been found of considerable value, and many of the practically obsolete, yet official, drugs are excluded. Some space is devoted to explanations of the mode of action of the various drugs, but chief stress is laid on their clinical uses.

The Salvarsan Treatment of Syphilis in Private Practice, with Some Account of the Modern Methods of Diagnosis. By George Stopford-Taylor, M.D., M.R.C.S., and Robert William MacKenna, M.A., M.D., B.Ch., Physicians to the Liverpool Skin Hospital. Pp. 92, with 9 Plates. New York: Rebman Company, 1914. Cloth, $1.50.

In this little volume the authors record the impressions they have gained and the conclusions they have arrived at after more than three years' use of salvarsan. All the work was done in private practice, where the after-histories of the patients could be followed. In the first chapter are discussed the methods of demonstrating the *Spirochæta pallida*, its cultivation, the serum diagnosis of syphilis, and luetin reaction. The short second chapter is devoted to parasyphilis, with the newer facts in etiology and treatment. Chapter III, the largest, deals with the salvarsan treatment in general, setting forth the various methods of administration, the reaction after injection, the process of elimination of arsenic, the effects of the drug on the various types of syphilitic lesions and the Wassermann reaction, the contraindications and dangers of the drug, and the questions of relapses and dosage. The remaining chapter treats of the combined treatment with salvarsan and mercury. Photographic reproductions showing the effects of salvarsan administration on various superficial lesions, and an index, conclude the volume. The results obtained by the authors lead them strongly to recommend combined salvarsan and vigorous mercurial treatment as the ideal method of dealing with syphilis.

Die Störungen der männlichen Geschlechtsfunktionen und ihre Behandlung. By Dr. Emil Kantorowicz. Pp. 118, with 11 Illustrations, Partly Colored. Berlin and Vienna: Urban & Schwarzenberg. New York: Rebman Company, 1913. Cloth, 3 marks (75 cents).

The little book is divided into three parts, the first being on the anatomy and physiology of the male genital apparatus, the second on the symptomatology and diagnosis of sexual disorders—exclusive of the specific infections,—and the third on the treatment of these disorders. The second part bears exclusively on perversions of the sex instinct and on impotence, but in the part on treatment reference is made to posterior gonococcic urethritis, prostatitis, epididymitis, etc. Considerable space is devoted to psychic treatment, hypnotism, and to the administration of yohimbin, with which the author seems to have had good results in cases of impotence. The use of a preparation known as libidol, consisting of mixed extract of yohimbe bark and the wood of Muira puama, a Brazilian plant, together with extract of kola, is also recommended in these cases.

The Dietetic Treatment of Diabetes. By B. D. Basu, Major, I. M. S. (Retired). Fourth Edition, Revised and Enlarged. Pp. xviii + 52. Bahaduranj, Allahabad, India: The Panini Office, 1913.

From his experience in India, the author of this little book has come to look upon diabetes as a manifestation of alimentary toxemia due, in turn, to oral sepsis, piles, errors in diet, malaria, worry, adulteration of foodstuffs, overpolished rice, inferior flour, etc. It is the belief of many that diabetes has been prevalent in India since the introduction of the potato. The author's dietetic recommendations include milk, cocoanut cakes, almond, pistachio nut, rice, millet, oleaginous seeds in general, and vegetable curries. The use of meat, alcohol, tea, coffee, and cocoa should be restricted or entirely interdicted. The book contains both a discussion of western conceptions of the pathogenesis and treatment of diabetes, and a number of original recommendations based upon the author's observations in the East.

Local Anesthesia. By Dr. Arthur Schlesinger, Berlin. Translated by F. S. Arnold, B.A., M.B., B.Ch. (Oxon.). Duodecimo of 211 Pages, with 22 Illustrations. New York: Rebman Company, 1914. Cloth, $1.50, net.

The chief aim of this little work, the author tells us, is to enable those who have had no opportunity of gaining acquaintance with the various methods of local anesthesia by seeing them carried out in actual practice, to perfect themselves in the technique by proceeding gradually from the simpler to the more difficult tasks. The book contains separate chapters on the physical principles of local anesthesia; on the action and properties of the various local anesthetics; on adjuvants in local anesthesia, *e.g.*, cold and anemia; on the various methods of inducing local anesthesia, and on local anesthesia in special operations on the head, neck, thorax, extremities, abdomen, anal region, and genitourinary tract. Throughout, the author's discussion has been largely limited to the procedures which he has found the simplest and most practical, new and as yet unproved methods being merely cited. On the whole, the book may be highly recommended as an introduction to practical local anesthesia.

The Pocket Formulary for the Treatment of Disease in Children. By Ludwig Freyberger, J.P., M.D., M.R.C.P., M.R.C.S., Late Hon. Physician, St. Pancras and Northern Dispensary, etc Fourth, Revised and Enlarged Edition. Pp. 260. New York: Rebman Company, 1914. Flexible Leather Binding, $2.00.

The aim of the author in each of the successive editions of this little volume has been to afford to the practitioner and the senior medical student in a concise and handy form, all information required as to the treatment of children's diseases with drugs. The agents referred to are arranged in alphabetical order. Under each drug is given a brief account of its properties, therapeutic uses, incompatibles, dosage in children of various ages, correction of taste, examples of prescriptions, antagonists and antidotes. Most of the drugs taken up are official in the British Pharmacopeia. Those drugs with which the author has had personal experience in the treatment of diseases of children are referred to as "very useful" or "useful" in the paragraph on therapeutics. Special attention is paid to the correction of the taste of the drugs; the minimum quantity of the flavoring agent which suffices to disguise the disagreeable taste or smell of a given dose of every drug is mentioned, having been definitely ascertained by experiment. In addition to this useful feature, the book contains an appendix with information on preparations suitable for gargles, for hypodermic injections, for inhalations and sprays, for nasal, pharyngeal and laryngeal application, etc.; also brief sections on von Pirquet's test for tuberculosis and on tuberculin treatment, a therapeutic index, and a list of the symptoms of poisoning by various drugs, with treatment.

The General Field

Conducted by A. G. CRANDALL

A Sizeable Job

The Chamber of Commerce of the United States represents various trade organizations throughout the country. This body contains some very prominent business men; in fact, men who have a very considerable influence upon their fellows.

At a recent meeting it was resolved to appoint a committee to undertake and study the problems relative to food and drug control. This body is also to work for uniform laws governing the control of food and drugs, stating that there should be "the highest degree of efficiency in food and drugs control which is possible to have prevailing universally and equally in every part of the United States."

Considering the fact that the laws are hardly ever the same in any two States on any subject whatever, and that where "home rule" for cities prevails in a given State, all the cities within the borders of that State are allowed to make their own municipal laws, it is evident that the subcommittee of the Chamber of Commerce of the United States have undertaken about as comprehensive a job as any which has come to our notice lately.

* * *

More Lubrication Indicated

The obstinacy of the human race, especially those who are supposed to have become enlightened, is almost beyond belief. Physical benefits resulting to the human race from a liberal consumption of olive oil have been explained over and over in the Sunday newspapers and other wide avenues of thought. And yet there are multitudes who stubbornly refuse to indulge, even sparingly, in this universal panacea.

A little reflection should convince any man or woman of normal reasoning powers that olive oil must be clearly indicated in their case, as the human organism is a machine, and a most complicated one. All machinery needs oil.

The process of digestion differs in every individual, although there are numerous points of similarity. Lack of judgment in the alimentation may cause considerable friction in the machine; under such circumstances, what could be more logical than the application of lubrication to the heated bearings? Of course, it is necessary that this oleaginous process be scientifically applied; otherwise, it may disturb the equilibrium and produce too rapid revolutions of the cranial wheels.

It will be remembered that a certain prominent Roman was declared to have "a lean and hungry look." Presumably he did not indulge sufficiently in the "sublime Lucca," or he would have been more optimistic and less suspicious and the history of Rome would have been different.

Obviously the great need of the average citizen is a more general habit of lubrication; pork-fat being expensive and cotton-seed mostly required in the dairy interests, a greater family use of genuine olive oil would, undoubtedly, be a public benefit.

An Illogical Condition

Just at present many eloquent appeals are being sent out in large cities in behalf not only of unemployed women, but women working at small salaries as clerks in department stores or as operators in the various manufacturing plants. These appeals dwell mournfully upon the fact that it is practically impossible for young women to secure comfortable quarters and suitable food and clothing with the wages they receive from their employers.

There is little doubt that the number of young women available for such positions is far in excess of the demand. Such being the case, employers are able to secure their help on practically their own terms.

If there was no other alternative for these employees their case would be more pitiable than it is. But, coincidently with the excess of female help in commercial lines, there is an even greater lack of domestic help available in families.

If it were possible to induce a reasonable number of these young women to engage as maids and housekeepers, the problem would be solved in short order. Just why a woman will work for starvation wages in a store or factory and submit to the browbeating and indifference naturally associated with a position of uncertain tenure, when she can be that most independent object on earth, a competent housemaid, and secure almost if not quite as much in the way of wages plus board and lodging as she can secure elsewhere without board and lodging, is one of the mysteries of modern life.

It is said that there are families where the domestic help is not treated with consideration, but as there are probably five other positions instantly available to any domestically efficient woman, that state of affairs should not necessarily need to figure very long.

* * *

The Military Detention Camps

General Sherman's famous definition of war is probably accepted at its face value by the army prisoners interned and confined at various points in the belligerent countries.

Numerous reports are heard that these prisoners are not well suited with their food, and that they are confined in very close quarters with insufficient protection from the weather, with no sanitary privileges, and are extremely dissatisfied with their lot.

When we associate with this the signs and the prospects that the war may be prolonged for an indefinite period, with ever-increasing hardships for those actively engaged in the various defensive and offensive movements, and take into account the prospects of a steady influx of additional prisoners at the various detention camps, it doesn't require a very active imagination to picture a state of affairs which may rival the horrors of actual warfare.

Perhaps no phases of the Civil War between the States occasioned more bitterness, and of a character likely to persist year after year, than the manner in which the military prisons were conducted. And as a half-century has passed since then, in which there has developed a much higher standard of living, the hardships of the military prisons are not likely to be endured with any increase of forbearance.

Making all due allowance for that

part of the war news which may be built upon the imaginations of the correspondents, it seems impossible to avoid the conclusion that the military detention camps are likely to furnish their full quota of the horrors identified with the present Titanic struggle.

* * *

A Pessimistic View of the Human Foot

A contributor to a well-known medical weekly takes a very pessimistic view of the outlook for pedestrianism, and says that the foot of the Indian or Japanese soon goes to pieces on our hard pavements, and that collectively the American-born population is suffering greatly in efficiency from similar causes.

According to this authority the human foot is at its best only when it can patter about unhampered by restrictive covering and can rest on soft, yielding surfaces. This normal function of the human foot is quite different from present conditions.

Another serious drawback to human efficiency is the change of posture brought about by the combined influence of hard, unyielding surfaces and the clumsy apparatus required to protect the feet from such contact. This is aggravated by the feminine propensity, because of high heels, to thrust the weight unequally upon the front of the foot, with much injury to certain muscles of the leg.

Altogether the outlook is very dismal.

It seems, therefore, little short of heroism for the shop-girl to stand all day upon feet encased in the conventional footgear, and perhaps dance several hours in the succeeding night. They do this, however, with apparent cheerfulness, and few indeed are the feminines who can ever be induced to admit that the high-heeled shoes they wear are not perfectly comfortable.

While the adaptability of the human physique has been the eighth wonder of the world, the foot seems to be giving up the struggle. And yet it is possible that the views of the medical authority above referred to are a little more pessimistic than conditions justify.

* * *

A New Field for College Professors

It is perhaps unnecessary to remark that few sons of college professors become professors themselves. By this token we might gather the impression that many college professors have in the bosoms of their various families surreptitiously given expression to a regret that they had not taken up the occupation of barber instead of professor.

But if an eminent official in the New York City government has his way there is likely to be openings of a most agreeable nature for dissatisfied college instructors. This gentleman proposes that the police be authorized to identify themselves more closely with the sociological conditions prevailing along their various beats, and to gather statistics as just what factors are responsible for the pessimism of numerous inhabitants of Manhattan Island, who would like to have things somewhat different from what they are at present.

This opens up a new field of exploration. If the family in the flat overhead persists in working the phonograph overtime, what could be more soothing to the aggrieved

neighbors than to have some sympathetic policeman drop in and listen to the seventh repetition of "He's a Devil." He could also listen to family discussions as to the relative merits of fried onions and boiled carrots, advise how to determine the age of a "strictly fresh" egg, etc. In fact, there seems to be no end to the helpful functions the policeman could assume, equipped with his locust stick.

Numerous city residents have been urged to forsake the complexities of city life and get nearer to nature. This is evidently a mistake; we should all know more of each other and thus be able to enter into closer sympathies. The sociological policeman could be the means of communication with the families we no longer speak to.

It has been said that that country is best governed that is least governed, but that was probably a mistake.

* * *

A New Apple Industry

The United States Agricultural Department in a recent bulletin calls attention to the uses which may be made of the undersized and unmarketable apples which have heretofore in some sections practically gone to waste. The suggestion is that the juice of these apples be extracted, clarified, and boiled down to a much condensed form. The syrup thus resulting is recommended as an agreeable addition to the diet.

This line of investigation reflects credit upon the department, but will not be hailed as a great discovery by people in the northeastern sections of the country. "Boiled cider" is well known in New England, being a prominent constituent of, for example, "Shaker apple sauce," which is made of a combination of so-called sweet apples with the concentrated boiled cider, producing a table relish not even equalled by the famed apple butter of Eastern Pennsylvania.

As apples have no value for stock feeding, except at least to very little extent, the wasteage is a very considerable drawback to the apple industry. But while the utilizing of these apples is to be encouraged, the fact should not be overlooked that apple juice in its natural state can easily become "apple jack," and that the genuine Prohibitionist considers the manufacturing of apple juice into cider as inspired solely by Beelzebub.

* * *

A Slur on Philadelphia

Philadelphians who can trace their ancestry back to the old colonial days naturally have great pride in their native city. It is therefore all the more galling for them to read in the daily newspapers that crooks, especially pickpockets, declare this town to be one of the most unprofitable fields that they have ever operated in. They say that Philadelphians are such "tightwads" that the risk of removing the contents of a change pocket is all out of proportion with the results. They complain that Philadelphians never carry around much money, and that they seem to be constantly watching out for even such small sums as they have on their person.

These light-fingered gentry also severely criticise the "pay as you enter" cars, stating that it is hard for the pickpocket to escape from one of these shut-in cars when, as they say often happens, a Philadelphian creates a scene because he has just been relieved of 43 cents. Civic pride should be sufficient to rectify these conditions.

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